

Glossary

A

abiotic factor: physical, or nonliving, factor that shapes an ecosystem (66)

factor abiótico: factor físico, o inanimado, que da forma a un ecosistema

abscisic acid: plant hormone that inhibits cell division and, therefore, growth (711)

ácido abscísico: hormona vegetal que inhibe la división celular y, por ende, el crecimiento

acetylcholine: neurotransmitter that produces an impulse in a muscle cell (931)

acetilcolina: neurotransmisor que produce un impulso en una célula muscular

acid: compound that forms hydrogen ions (H^+) in solution; a solution with a pH of less than 7 (44)

ácido: compuesto que en una solución produce iones hidrógeno (H^+); una solución con un pH inferior a 7

acid rain: rain containing nitric and sulfuric acids (164)

lluvia ácida: lluvia que contiene ácido nítrico y ácido sulfúrico

actin: thin filament of protein found in muscles (930)

actina: microfilamento de proteína que se halla en los músculos

action potential: reversal of charges across the cell membrane of a neuron; also called a nerve impulse (898)

potencial de acción: inversión de las cargas a través de la membrana de una neurona; también llamado impulso nervioso

activation energy: energy that is needed to get a reaction started (51)

energía de activación: energía necesaria para que comience una reacción

active immunity: immunity that develops as a result of natural or deliberate exposure to an antigen (1020)

inmunidad activa: inmunidad que se desarrolla a consecuencia de la exposición natural o deliberada a un antígeno

adaptation: heritable characteristic that increases an organism's ability to survive and reproduce in an environment (461)

adaptación: característica heredable que aumenta la capacidad de un organismo de sobrevivir y reproducirse en un medio ambiente

adaptive radiation: process by which a single species or a small group of species evolves into several different forms that live in different ways (550)

radiación adaptativa: proceso mediante el cual una sola especie o un grupo pequeño de especies evoluciona y da lugar a diferentes seres que viven de diversas maneras

adenosine triphosphate (ATP): compound used by cells to store and release energy (226)

trifosfato de adenosina (ATP): compuesto utilizado por las células para almacenar y liberar energía

adhesion: force of attraction between different kinds of molecules (41, 686)

adhesión: fuerza de atracción entre diferentes tipos de moléculas

aerobic: process that requires oxygen (252)

aeróbico: proceso que requiere oxígeno

age structure: number of males and females of each age in a population (131)

estructura etaria: número de machos y de hembras de cada edad en una población

aggression: threatening behavior that one animal uses to exert dominance over another animal (848)

agresión: comportamiento amenazador que emplea un animal para ejercer control sobre otro animal

algal bloom: increase in the amount of algae and other producers that results from a large input of a limiting nutrient (611)

floreCIMIENTO de algas: aumento de la cantidad de algas y otros productores debido a una gran entrada de un nutriente limitante

allele: one of a number of different forms of a gene (310)

alelo: cada una de las diversas formas de un gen

allele frequency: number of times that an allele occurs in a gene pool compared with the number of alleles in that pool for the same gene (483)

frecuencia alélica: número de veces que aparece un alelo en un caudal genético, comparado con la cantidad de alelos en ese caudal para el mismo gen

allergy: overreaction of the immune system to an antigen (1024)

alergia: reacción exagerada del sistema inmune ante un antígeno

alternation of generations: life cycle that has two alternating phases—a haploid (N) phase and diploid (2N) phase (608, 637)

alternancia de generaciones: ciclo vital con dos fases que se alternan, una fase haploide (N) y una fase diploide (2N)

alveolus (pl. alveoli): one of many tiny air sacs at the end of a bronchiole in the lungs that provides surface area for gas exchange to occur (790, 964)

alvéolos: pequeños sacos, ubicados en las terminaciones de los bronquiolos pulmonares, que proporcionan una superficie en la que tiene lugar el intercambio gaseoso

amino acid: compound with an amino group on one end and a carboxyl group on the other end (48)

aminoácido: compuesto que contiene un grupo amino en un extremo y un grupo carboxilo en el otro extremo

Glossary *(continued)*

amniotic egg: egg composed of shell and membranes that creates a protected environment in which the embryo can develop out of water (825)

huevo amniota: huevo formado por una cáscara y membranas que crea un ambiente protegido en el cual el embrión puede desarrollarse en un medio seco

amylase: enzyme in saliva that breaks the chemical bonds in starches (876)

amilasa: enzima de la saliva que fragmenta los enlaces químicos de los almidones

anaerobic: process that does not require oxygen (252)

anaeróbico: proceso que no requiere oxígeno

analogous structures: body parts that share a common function, but not structure (469)

estructuras análogas: partes del cuerpo que tienen la misma función, mas no la misma estructura

anaphase: phase of mitosis in which the chromosomes separate and move to opposite ends of the cell (283)

anafase: fase de la mitosis en la cual los cromosomas se separan y se desplazan hacia los extremos opuestos de la célula

angiosperm: group of seed plants that bear their seeds within a layer of tissue that protects the seed; also called flowering plant (646)

angiospermas: grupo de plantas con semillas, que están protegidas con una capa de tejido. Se conocen también como plantas que florecen.

anther: flower structure in which pollen grains are produced (697)

antera: estructura de la flor en la cual se generan los granos de polen

antheridium (pl. antheridia): male reproductive structure in some plants that produces sperm (642)

anterioridio: en algunas plantas, estructura reproductora masculina que produce esperma (anterozoides)

anthropoid: primate group made up of monkeys, apes, and humans (766)

antropoide: grupo de primates constituido por monos, simios y humanos

antibiotic: group of drugs used to block the growth and reproduction of bacterial pathogens (588)

antibiótico: grupo de drogas utilizadas para bloquear el desarrollo y la reproducción de organismos patógenos bacterianos

antibody: protein that either attacks antigens directly or produces antigen-binding proteins (1016)

anticuerpo: proteína que ataca directamente a los antígenos o produce proteínas que se unen a los antígenos

anticodon: group of three bases on a tRNA molecule that are complementary to the three bases of a codon of mRNA (369)

anticodón: grupo de tres bases en una molécula de ARN de transferencia que son complementarias a las tres bases de un codón de ARN mensajero

antigen: any substance that triggers an immune response (1016)

antígeno: cualquier sustancia que provoca una respuesta inmune

aphotic zone: dark layer of the oceans below the photic zone where sunlight does not penetrate (117)

zona afótica: sección oscura de los océanos donde no penetra la luz solar, situada debajo de la zona fótica

apical dominance: phenomenon in which the closer a bud is to the stem's tip, the more its growth is inhibited (710)

dominancia apical: fenómeno por el cual cuanto más cerca de la punta del tallo está un brote, más se inhibe su crecimiento

apical meristem: group of unspecialized cells that divide to produce increased length of stems and roots (668)

meristemo apical: grupo de células no especializadas que se dividen para producir un aumento en la longitud de tallos y raíces

apoptosis: process of programmed cell death (288)

apoptosis: proceso de muerte celular programada

appendage: structure, such as a leg or antenna that extends from the body wall (753)

apéndice: estructura, como una pierna o una antena, que se proyecta desde la superficie corporal

appendicular skeleton: the bones of the arms and legs along with the bones of the pelvis and shoulder area (922)

esqueleto apendicular: los huesos de los brazos y de las piernas junto con los huesos de la pelvis y del área de los hombros

aquaculture: raising of aquatic organisms for human consumption (176)

acuicultura: cría de organismos acuáticos para el consumo humano

aquaporin: water channel protein in a cell (210)

acuaporina: proteína que canaliza el agua en una célula

Archaea: domain consisting of unicellular prokaryotes that have cell walls that do not contain peptidoglycan; corresponds to the kingdom Archeabacteria (526)

Arqueas: dominio formado por procariotas unicelulares cuyas paredes celulares no contienen peptidoglicano; corresponden al reino de las Arqueobacterias

archegonium (pl. archegonia): structure in plants that produces egg cells (642)

arquegonio: estructura de las plantas que produce óvulos

artery: large blood vessel that carries blood away from the heart to the tissues of the body (952)

arteria: vaso sanguíneo grande que transporta la sangre desde el corazón a los tejidos del cuerpo

artificial selection: selective breeding of plants and animals to promote the occurrence of desirable traits in offspring (458)

selección artificial: cría selectiva de plantas y animales para fomentar la ocurrencia de rasgos deseados en la progenie

asexual reproduction: process of reproduction involving a single parent that results in offspring that are genetically identical to the parent (19, 277)

reproducción asexual: proceso de reproducción que involucra a un único progenitor y da por resultado descendencia genéticamente idéntica a ese progenitor

asthma: chronic respiratory disease in which air passages narrow, causing wheezing, coughing, and difficulty breathing (1024)

asma: enfermedad respiratoria crónica en la cual las vías respiratorias se estrechan, provocando jadeos, tos y dificultad para respirar

atherosclerosis: condition in which fatty deposits called plaque build up inside artery walls and eventually cause the arteries to stiffen (958)

arteriosclerosis o aterosclerosis: enfermedad en la cual se acumulan depósitos de grasa llamados placas en el interior de las paredes arteriales que, con el tiempo, causan un endurecimiento de las arterias

atom: the basic unit of matter (34)

átomo: unidad básica de la materia

ATP synthase: cluster of proteins that span the cell membrane and allow hydrogen ions (H^+) to pass through it (237)

ATP sintasa: complejo de proteínas unidas a la membrana celular que permiten el paso de los iones de hidrógeno (H^+) a través de ella

atrium (pl. atria): upper chamber of the heart that receives blood from the rest of the body (792, 949)

aurícula: cavidad superior del corazón que recibe sangre del resto del cuerpo

autonomic nervous system: part of the peripheral nervous system that regulates activities that are involuntary, or not under conscious control; made up of the sympathetic and parasympathetic subdivisions (908)

sistema nervioso autónomo: parte del sistema nervioso periférico que regula las actividades involuntarias, o que son independientes de la conciencia; está compuesto por las subdivisiones simpática y parasimpática

autosome: chromosome that is not a sex chromosome; also called autosomal chromosome (393)

autosoma: cromosoma que no es un cromosoma sexual; también llamado cromosoma autosómico

autotroph: organism that is able to capture energy from sunlight or chemicals and use it to produce its own food from inorganic compounds; also called a producer (69, 228)

autótrofo: organismo capaz de atrapar la energía de la luz solar o de las sustancias químicas y utilizarla para producir su propio alimento a partir de compuestos inorgánicos; también llamado productor

auxin: regulatory substance produced in the tip of a growing plant that stimulates cell elongation and the growth of new roots (709)

auxina: sustancia reguladora producida en la punta de una planta en crecimiento que estimula el alargamiento celular y el crecimiento de raíces nuevas

axial skeleton: skeleton that supports the central axis of the body; consists of the skull, vertebral column, and the rib cage (922)

esqueleto axial: esqueleto que sostiene al eje central del cuerpo; consiste en el cráneo, la columna vertebral y la caja torácica

axon: long fiber that carries impulses away from the cell body of a neuron (897)

axón: fibra larga que lleva los impulsos desde el cuerpo celular de una neurona

B

bacillus (pl. bacilli): rod-shaped prokaryote (582)

bacilo: procariota con forma de bastón

background extinction: extinction caused by slow and steady process of natural selection (548)

extinción de fondo: extinción causada por un proceso lento y continuo de selección natural

Bacteria: domain of unicellular prokaryotes that have cell walls containing peptidoglycan; corresponds to the kingdom eubacteria (525)

Bacteria: pertenece al dominio de los unicelulares procariota cuyas paredes celulares contienen peptidoglicano; corresponde al reino de las Eubacterias

bacteriophage: kind of virus that infects bacteria (340, 575)

bacteriófago: clase de virus que infecta a las bacterias

bark: tissues that are found outside the vascular cambium, including the phloem, cork cambium, and cork (679)

corteza: tejidos que se hallan fuera del cámbium vascular, incluidos el floema, el cámbium suberoso y el corcho

base: compound that produces hydroxide ions (OH^-) in solution; solution with a pH of more than 7 (44)

base: compuesto que en una solución produce iones hidróxido (OH^-); una solución con un pH superior a 7

Glossary (continued)

base pairing: principle that bonds in DNA can form only between adenine and thymine and between guanine and cytosine (348)

apareamiento de bases: principio que establece que los enlaces en el ADN sólo pueden formarse entre adenina y timina y entre guanina y citosina

behavior: manner in which an organism reacts to changes in its internal condition or external environment (840)

comportamiento: manera en que un organismo reacciona a los cambios que ocurren en su condición interna o en el medio ambiente externo

behavioral isolation: form of reproductive isolation in which two populations develop differences in courtship rituals or other behaviors that prevent them from breeding (495)

aislamiento conductual: forma de aislamiento reproductivo en la cual dos poblaciones desarrollan diferencias en sus rituales de cortejo o en otros comportamientos que evitan que se apareen

benthos: organisms that live attached to or near the bottom of lakes, streams, or oceans (117)

bentos: organismos que viven adheridos al fondo, o cerca del fondo, de lagos, arroyos u océanos

bias: particular preference or point of view that is personal, rather than scientific (14)

parcialidad: preferencia especial o punto de vista que es personal en lugar de ser científico

bilateral symmetry: body plan in which a single imaginary line can divide the body into left and right sides that are mirror images of each other (738)

simetría bilateral: diseño corporal en el cual una línea imaginaria divide al cuerpo en dos lados, izquierdo y derecho, que son imágenes reflejas una del otra

binary fission: type of asexual reproduction in which an organism replicates its DNA and divides in half, producing two identical daughter cells (583)

fisión binaria: tipo de reproducción asexual en la cual un organismo replica su ADN, se divide por la mitad y produce dos células hijas idénticas

binocular vision: ability to merge visual images from both eyes, providing depth perception and a three-dimensional view of the world (765)

visión binocular: capacidad de fusionar las imágenes visuales provenientes de ambos ojos, lo cual proporciona una percepción profunda y una visión tridimensional del mundo

binomial nomenclature: classification system in which each species is assigned a two-part scientific name (512)

nomenclatura binaria: sistema de clasificación en el cual a cada especie se le asigna un nombre científico que consta de dos partes

biodiversity: total of the variety of organisms in the biosphere; also called biological diversity (166)

biodiversidad: totalidad de los distintos organismos que se hallan en la biósfera; también denominada diversidad biológica

biogeochemical cycle: process in which elements, chemical compounds, and other forms of matter are passed from one organism to another and from one part of the biosphere to another (79)

ciclo biogeoquímico: proceso en el cual los elementos, los compuestos químicos y otras formas de materia pasan de un organismo a otro y de una parte de la biósfera a otra

biogeography: study of past and present distribution of organisms (465)

biogeografía: estudio de la distribución pasada y presente de los organismos

bioinformatics: application of mathematics and computer science to store, retrieve, and analyze biological data (407)

bioinformática: aplicación de las matemáticas y de la informática para almacenar, recuperar y analizar información biológica

biological magnification: increasing concentration of a harmful substance in organisms at higher trophic levels in a food chain or food web (161)

bioacumulación: concentración creciente de sustancias perjudiciales en los organismos de los niveles tróficos más elevados de una cadena o red alimentaria

biology: scientific study of life (17)

biología: estudio científico de la vida

biomass: total amount of living tissue within a given trophic level (78)

biomasa: cantidad total de tejido vivo dentro de un nivel trófico dado

biome: a group of ecosystems that share similar climates and typical organisms (65)

bioma: un grupo de ecosistemas que comparten climas similares y organismos típicos

biosphere: part of Earth in which life exists including land, water, and air or atmosphere (21, 64)

biósfera: parte de la Tierra en la cual existe vida, y que incluye el suelo, el agua y el aire o atmósfera

biotechnology: process of manipulating organisms, cells, or molecules, to produce specific products (419)

biotecnología: proceso de manipular organismos, células o moléculas con el fin de obtener productos específicos

biotic factor: any living part of the environment with which an organism might interact (66)

factor biótico: cualquier parte viva del medio ambiente con la cual un organismo podría interactuar

bipedal: term used to refer to two-foot locomotion (767)

bípedo: término utilizado para referirse a la locomoción sobre dos pies

blade: thin, flattened part of a plant leaf (680)

lámina foliar o limbo: parte delgada y plana de la hoja de una planta

blastocyst: stage of early development in mammals that consists of a hollow ball of cells (294, 996)

blastocisto: etapa temprana del desarrollo de los mamíferos que consiste en una bola hueca formada por una capa de células

blastula: hollow ball of cells that develops when a zygote undergoes a series of cell divisions (739)

blástula: esfera hueca de células que se desarrolla cuando un cigoto atraviesa una serie de divisiones celulares

bone marrow: soft tissue found in bone cavities (924)

médula ósea: tejido blando que se halla en las cavidades de los huesos

bottleneck effect: a change in allele frequency following a dramatic reduction in the size of a population (490)

efecto cuello de botella: un cambio en la frecuencia alélica que resulta cuando el tamaño de una población reduce drásticamente

Bowman's capsule: cuplike structure that encases the glomerulus; collects filtrate from the blood (884)

cápsula de Bowman: estructura en forma de taza que encierra al glomérulo; recoge los filtrados provenientes de la sangre

brain stem: structure that connects the brain and spinal cord; includes the medulla oblongata and the pons (903)

tronco cerebral: estructura que conecta al cerebro con la médula espinal; incluye el bulbo raquídeo y el puente de Varolio

bronchus (pl. bronchi): one of two large tubes in the chest cavity that leads from the trachea to the lungs (964)

bronquio: cada uno de los dos conductos largos ubicados en la cavidad torácica que parten desde la tráquea y llegan a los pulmones

bryophyte: group of plants that have specialized reproductive organs but lack vascular tissue; includes mosses and their relatives (641)

briofitas: grupo de plantas que tienen órganos reproductores especializados pero carecen de tejido vascular; incluyen a los musgos y sus congéneres

bud: plant structure containing apical meristem tissue that can produce new stems and leaves (675)

yema o gema: estructura de las plantas que contiene tejido del meristemo apical y puede producir nuevos tallos y hojas

buffer: compound that prevents sharp, sudden changes in pH (44)

solución amortiguadora: compuesto que evita cambios bruscos y repentinos en el pH

C

calcitonin: hormone produced by the thyroid that reduces blood calcium levels (985)

calcitonina: hormona producida por la tiroides que reduce los niveles de calcio en la sangre

Calorie: measure of heat energy in food; equivalent to 1000 calories (868)

Caloría: medida de la energía térmica de los alimentos, equivalente a 1000 calorías

calorie: amount of energy needed to raise the temperature of 1 gram of water by 1 degree Celsius (250)

caloría: cantidad de energía necesaria para elevar la temperatura de 1 gramo de agua en 1 grado Celsius

Calvin cycle: light-independent reactions of photosynthesis in which energy from ATP and NADPH is used to build high-energy compounds such as sugar (238)

ciclo de Calvin: reacciones de la fotosíntesis independientes de la luz en las cuales se utiliza la energía del ATP y del NADPH para elaborar compuestos con alto contenido energético, como el azúcar

cancer: disorder in which some of the body's cells lose the ability to control growth (289)

cáncer: enfermedad en la cual algunas de las células del cuerpo pierden la capacidad de controlar su crecimiento

canopy: dense covering formed by the leafy tops of tall rain forest trees (112)

dosel forestal: cubierta densa formada por las copas de los árboles altos del bosque tropical

capillary: smallest blood vessel; brings nutrients and oxygen to the tissues and absorbs carbon dioxide and waste products (952)

capilar: más pequeño de los vasos sanguíneos más pequeños; lleva nutrientes y oxígeno a los tejidos y absorbe dióxido de carbono y productos de desecho

capillary action: tendency of water to rise in a thin tube (686)

capilaridad: tendencia del agua a ascender en un tubo delgado

capsid: protein coat surrounding a virus (575)

cápsida: cobertura de proteínas que rodea a un virus

carbohydrate: compound made up of carbon, hydrogen, and oxygen atoms; type of nutrient that is the major source of energy for the body (46, 869)

hidrato de carbono: compuesto formado por átomos de carbono, hidrógeno y oxígeno; tipo de nutriente que es la fuente principal de energía para el cuerpo

carnivore: organism that obtains energy by eating animals (71)

carnívoro: organismo que obtiene energía al comer otros animales

Glossary (continued)

carpel: innermost part of a flower that produces and shelters the female gametophytes (697)

carpelo: parte interna de una flor que produce y alberga los gametofitos femeninos

carrying capacity: largest number of individuals of a particular species that a particular environment can support (135)

capacidad de carga: mayor cantidad de individuos de una especie en particular que un medio ambiente específico puede mantener

cartilage: type of connective tissue that supports the body and is softer and more flexible than bone (757, 924)

cartilago: tipo de tejido conectivo que sostiene al cuerpo y es más blando y flexible que el hueso

Casparian strip: waterproof strip that surrounds plant endodermal cells and is involved in the one-way passage of materials into the vascular cylinder in plant roots (672)

banda de Caspary: banda impermeable que rodea a las células endodérmicas de las plantas y participa en el transporte unidireccional de las sustancias hacia el interior del cilindro vascular de las raíces de las plantas

catalyst: substance that speeds up the rate of a chemical reaction (52)

catalizador: sustancia que acelera la velocidad de una reacción química

cell: basic unit of all forms of life (191)

célula: unidad básica de todas las formas de vida

cell body: largest part of a typical neuron; contains the nucleus and much of the cytoplasm (897)

cuerpo celular: parte más grande de una neurona típica; que contiene el núcleo y gran parte del citoplasma

cell cycle: series of events in which a cell grows, prepares for division, and divides to form two daughter cells (280)

ciclo celular: serie de sucesos en los cuales una célula crece, se prepara para dividirse y se divide para formar dos células hijas

cell division: process by which a cell divides into two new daughter cells (276)

división celular: proceso por el cual una célula se divide en dos células hijas nuevas

cell membrane: thin, flexible barrier that surrounds all cells; regulates what enters and leaves the cell (193)

membrana celular: barrera flexible y delgada que rodea a todas las células; regula lo que entra y sale de la célula

cell theory: fundamental concept of biology that states that all living things are composed of cells; that cells are the basic units of structure and function in living things; and that new cells are produced from existing cells (191)

teoría celular: concepto fundamental de la Biología que establece que todos los seres vivos están compuestos por células; que las células son las unidades básicas estructurales y funcionales de los seres vivos; y que las células nuevas se producen a partir de células existentes

cell wall: strong, supporting layer around the cell membrane in some cells (203)

pared celular: capa resistente que sirve de sostén y está situada alrededor de la membrana celular de algunas células

cell-mediated immunity: immune response that defends the body against viruses, fungi, and abnormal cancer cells inside living cells (1019)

inmunidad celular: respuesta inmune que desde las células defiende al cuerpo contra virus, hongos y células anormales cancerígenas

cellular respiration: process that releases energy by breaking down glucose and other food molecules in the presence of oxygen (281)

respiración celular: proceso que libera energía al descomponer la glucosa y otras moléculas de los alimentos en presencia de oxígeno

central nervous system: includes the brain and spinal cord; processes information and creates a response that it delivers to the body (896)

sistema nervioso central: incluye el cerebro y la médula espinal; procesa información y genera una respuesta que es enviada al cuerpo

centriole: structure in an animal cell that helps to organize cell division (199, 282)

centríolo: estructura de una célula animal que contribuye a organizar la división celular

centromere: region of a chromosome where the two sister chromatids attach (282)

centrómero: región de un cromosoma donde se unen las dos cromátidas hermanas

cephalization: concentration of sense organs and nerve cells at the anterior end of an animal (740)

cefalización: concentración de órganos sensoriales y células nerviosas en el extremo anterior de un animal

cerebellum: part of the brain that coordinates movement and controls balance (811, 903)

cerebelo: parte del encéfalo que coordina el movimiento y controla el equilibrio

cerebral cortex: outer layer of the cerebrum of a mammal's brain; center of thinking and other complex behaviors (902)

corteza cerebral: capa externa del cerebro de un mamífero; centro del raciocinio y otros comportamientos complejos

cerebrum: part of the brain responsible for voluntary activities of the body; “thinking” region of the brain (811, 902)

cerebro: parte del encéfalo responsable de las actividades voluntarias del cuerpo; región “pensante” del encéfalo

chemical digestion: process by which enzymes break down food into small molecules that the body can use (875)

digestión química: proceso por el cual las enzimas descomponen los alimentos en moléculas pequeñas que el cuerpo puede utilizar

chemical reaction: process that changes, or transforms, one set of chemicals into another set of chemicals (50)

reacción química: proceso que cambia, o transforma, un grupo de sustancias químicas en otro grupo de sustancias químicas

chemosynthesis: process in which chemical energy is used to produce carbohydrates (70)

quimiosíntesis: proceso en el cual la energía química se utiliza para producir hidratos de carbono

chitin: complex carbohydrate that makes up the cell walls of fungi; also found in the external skeletons of arthropods (618)

quitina: hidrato de carbono complejo que forma las paredes celulares de los hongos; también se halla en los esqueletos externos de los artrópodos

chlorophyll: principal pigment of plants and other photosynthetic organisms (230)

clorofila: pigmento fundamental de las plantas y de otros organismos fotosintéticos

chloroplast: organelle found in cells of plants and some other organisms that captures the energy from sunlight and converts it into chemical energy (202)

cloroplasto: orgánulo de las células de las plantas y de otros organismos que captura la energía de la luz solar y la convierte en energía química

chordate: animal that has, for at least one stage of its life, a dorsal, hollow nerve cord, a notochord, a tail that extends beyond the anus, and pharyngeal pouches (731)

cordado: animal que, al menos durante una etapa de su vida, tiene un cordón nervioso hueco y dorsal, un notocordio, una cola que se prolonga más allá del ano y bolsas faríngeas

chromatid: one of two identical “sister” parts of a duplicated chromosome (282)

cromátida: una de las dos partes “hermanas” idénticas de un cromosoma duplicado

chromatin: substance found in eukaryotic chromosomes that consists of DNA tightly coiled around histones (280)

cromatina: sustancia que se halla en los cromosomas eucarióticos y que consiste en ADN enrollado apretadamente alrededor de las histonas

chromosome: threadlike structure within the nucleus that contains genetic information that is passed from one generation to the next (279)

cromosoma: estructura filiforme situada dentro del núcleo que contiene la información genética que se transmite de una generación a la siguiente

chyme: mixture of enzymes and partially-digested food (877)

quimo: mezcla de enzimas y alimentos parcialmente digeridos

cilium (pl. cilia): short hairlike projection that produces movement (607)

cilio: pequeña prolongación parecida a un pelo que produce movimiento

circadian rhythm: behavioral cycles that occur daily (847)

ritmo circadiano: ciclos conductuales que ocurren diariamente

clade: evolutionary branch of a cladogram that includes a single ancestor and all its descendants (516)

clado: rama evolutiva de un cladograma que incluye a un único ancestro y a todos sus descendientes

cladogram: diagram depicting patterns of shared characteristics among species (517)

cladograma: diagrama que representa patrones de características compartidas entre especies

class: in classification, a group of closely related orders (514)

clase: en la clasificación, un grupo de varios órdenes relacionados estrechamente

classical conditioning: type of learning that occurs when an animal makes a mental connection between a stimulus and some kind of reward or punishment (843)

condicionamiento clásico: tipo de aprendizaje que ocurre cuando un animal realiza una conexión mental entre un estímulo y algún tipo de recompensa o castigo

climate: average year-to-year conditions of temperature and precipitation in an area over a long period of time (96)

clima: promedio anual de las condiciones de temperatura y precipitación en un área durante un largo período de tiempo

clone: member of a population of genetically identical cells produced from a single cell (427)

clon: miembro de una población de células genéticamente idénticas producidas a partir de una célula única

closed circulatory system: type of circulatory system in which blood circulates entirely within blood vessels that extend throughout the body (792)

sistema circulatorio cerrado: tipo de sistema circulatorio en el cual la sangre circula completamente dentro de los vasos sanguíneos que se extienden por todo el cuerpo

coccus (pl. cocci): spherical prokaryote (582)

coco: procariota de forma esférica

cochlea: fluid-filled part of inner ear; contains nerve cells that detect sound (911)

cóclea: parte del oído interno llena de fluidos; contiene las células nerviosas que detectan el sonido

codominance: situation in which the phenotypes produced by both alleles are completely expressed (319)

codominancia: situación en la cual los fenotipos producidos por ambos alelos están expresados completamente

Glossary (continued)

codon: group of three nucleotide bases in mRNA that specify a particular amino acid to be incorporated into a protein (366)

codón: grupo de tres bases de nucleótidos en el RNA mensajero que especifican la incorporación de un aminoácido en particular en una proteína

coelom: body cavity lined with mesoderm (738)

celoma: cavidad corporal revestida de mesodermo

coevolution: process by which two species evolve in response to changes in each other over time (551)

coevolución: proceso por el cual dos especies evolucionan en respuesta a cambios mutuos en el transcurso del tiempo

cohesion: attraction between molecules of the same substance (41)

cohesión: atracción entre moléculas de la misma sustancia

collenchyma: in plants, type of ground tissue that has strong, flexible cell walls; helps support larger plants (667)

colénquima: en las plantas, tipo de tejido fundamental que tiene paredes celulares fuertes y flexibles; contribuye a sostener las plantas más grandes

commensalism: symbiotic relationship in which one organism benefits and the other is neither helped nor harmed (104)

comensalismo: relación simbiótica en la cual un organismo se beneficia y el otro ni se beneficia ni sufre daño

communication: passing of information from one organism to another (850)

comunicación: traspaso de información desde un organismo a otro

community: assemblage of different populations that live together in a defined area (64)

comunidad: conjunto de varias poblaciones que viven juntas en un área definida

companion cell: in plants, phloem cell that surrounds sieve tube elements (666)

célula anexa: en las plantas, célula del floema que rodea a los vasos cribosos

competitive exclusion principle: principle that states that no two species can occupy the same niche in the same habitat at the same time (101)

principio de exclusión competitiva: principio que afirma que dos especies no pueden ocupar el mismo nicho en el mismo hábitat al mismo tiempo

compound: substance formed by the chemical combination of two or more elements in definite proportions (36)

compuesto: sustancia formada por la combinación química de dos o más elementos en proporciones definidas

cone: in the eye, photoreceptor that responds to light of different colors, producing color vision (913)

cono: en el ojo, receptor de luz que responde a la luz de diferentes colores, produciendo la visión a color

coniferous: term used to refer to trees that produce seed-bearing cones and have thin leaves shaped like needles (114)

coníferas: término utilizado para referirse a los árboles que producen conos portadores de semillas y que tienen hojas delgadas con forma de aguja

conjugation: process in which paramoecia and some prokaryotes exchange genetic information (583, 608)

conjugación: proceso mediante el cual los paramecios y algunos procariotas intercambian información genética

connective tissue: type of tissue that provides support for the body and connects its parts (863)

tejido conectivo: tipo de tejido que proporciona sostén al cuerpo y conecta sus partes

consumer: organism that relies on other organisms for its energy and food supply; also called a heterotroph (71)

consumidor: organismo que depende de otros organismos para obtener su energía y su provisión de alimentos; también llamado heterótrofo

control group: group in an experiment that is exposed to the same conditions as the experimental group except for one independent variable (7)

grupo de control: en un experimento, grupo que está expuesto a las mismas condiciones que el grupo experimental, excepto por una variable independiente

controlled experiment: experiment in which only one variable is changed (7)

experimento controlado: experimento en el cual sólo se cambia una variable

convergent evolution: process by which unrelated organisms independently evolve similarities when adapting to similar environments (551)

evolución convergente: proceso mediante el cual organismos no relacionados evolucionan independientemente hacia caracteres similares cuando se adaptan a ambientes parecidos

cork cambium: meristematic tissue that produces the outer covering of stems during secondary growth of a plant (677)

cámbium suberoso: tejido del meristemo que produce la cubierta exterior de los tallos durante el crecimiento secundario de una planta

cornea: tough transparent layer of the eye through which light enters (912)

córnea: membrana dura y transparente del ojo a través de la cual entra la luz

corpus luteum: name given to a follicle after ovulation because of its yellow color (993)

cuerpo lúteo: nombre dado a un folículo después de la ovulación debido a su color amarillo

cortex: in plants, region of ground tissue just inside the root through which water and minerals move (670)

corteza radicular: en las plantas, región de tejido fundamental situada en el interior de la raíz a través de la cual pasan el agua y los minerales

corticosteroid: steroid hormone produced by the adrenal cortex (983)

corticosteroide o corticoide: hormona esteroídica producida por la corteza de las glándulas adrenales

cotyledon: first leaf or first pair of leaves produced by the embryo of a seed plant (652)

cotiledón: primera hoja o primer par de hojas producidas por el embrión de una planta fanerógama

courtship: type of behavior in which an animal sends out stimuli in order to attract a member of the opposite sex (848)

cortejo: tipo de comportamiento en el cual un animal emite estímulos para atraer a un miembro del sexo opuesto

covalent bond: type of bond between atoms in which the electrons are shared (37)

enlace covalente: tipo de enlace entre átomos en el cual se comparten los electrones

crossing-over: process in which homologous chromosomes exchange portions of their chromatids during meiosis (324)

entrecruzamiento: proceso por el cual los cromosomas homólogos intercambian partes de sus cromátidas durante la meiosis

cyclin: one of a family of proteins that regulates the cell cycle in eukaryotic cells (286)

ciclina: un componente de la familia de proteínas que regulan el ciclo celular de las células eucariotas

cytokinesis: division of the cytoplasm to form two separate daughter cells (282)

citocinesis: división del citoplasma para formar dos células hijas separadas

cytokinin: plant hormone produced in growing roots and in developing fruits and seeds (710)

citoquinina: hormona vegetal que se genera en las raíces en crecimiento y en los frutos y semillas en desarrollo

cytoplasm: fluid portion of the cell outside the nucleus (196)

citoplasma: parte fluida de la célula externa al núcleo

cytoskeleton: network of protein filaments in a eukaryotic cell that gives the cell its shape and internal organization and is involved in movement (199)

citoesqueleto: en una célula eucariota, red de filamentos proteínicos que otorga a la célula su forma y su organización interna y participa en el movimiento

D

data: evidence; information gathered from observations (8)

datos: evidencia; información reunida a partir de observaciones

deciduous: term used to refer to a type of tree that sheds its leaves during a particular season each year (112)

caduco: término utilizado para referirse a un tipo de árbol que pierde sus hojas cada año durante una estación en particular

decomposer: organism that breaks down and obtains energy from dead organic matter (71)

descomponedor: organismo que descompone y obtiene energía de la materia orgánica muerta

deforestation: destruction of forests (159)

deforestación: destrucción de los bosques

demographic transition: change in a population from high birth and death rates to low birth and death rates (144)

transición demográfica: en una población, cambio de índices de nacimiento y mortalidad altos a índices de nacimiento y mortalidad bajos

demography: scientific study of human populations (143)

demografía: estudio científico de las poblaciones humanas

dendrite: extension of the cell body of a neuron that carries impulses from the environment or from other neurons toward the cell body (897)

dendrita: prolongación del cuerpo celular de una neurona que transporta impulsos desde el medio ambiente o desde otras neuronas hacia el cuerpo celular

denitrification: process by which bacteria convert nitrates into nitrogen gas (84)

desnitrificación: proceso por el cual las bacterias del suelo convierten los nitratos en gas nitrógeno

density-dependent limiting factor: limiting factor that depends on population density (138)

factor limitante dependiente de la densidad: factor limitante que depende de la densidad de la población

density-independent limiting factor: limiting factor that affects all populations in similar ways, regardless of the population density (140)

factor limitante independiente de la densidad: factor limitante que afecta a todas las poblaciones de manera similar, sin importar la densidad de la población

deoxyribonucleic acid (DNA): genetic material that organisms inherit from their parents (18)

ácido desoxirribonucleico (ADN): material genético que los organismos heredan de sus padres

dependent variable: variable that is observed and that changes in response to the independent variable; also called the responding variable (7)

variable dependiente: variable que está siendo observada y cambia en respuesta a la variable independiente; también llamada variable de respuesta

Glossary (continued)

derived character: trait that appears in recent parts of a lineage, but not in its older members (518)

carácter derivado: rasgo que aparece en los descendientes recientes de un linaje, pero no en sus miembros más viejos

dermis: layer of skin found beneath the epidermis (937)

dermis: capa de la piel situada debajo de la epidermis

desertification: lower land productivity caused by overfarming, overgrazing, seasonal drought, and climate change (159)

desertificación: disminución de la productividad de la tierra debido al cultivo y al pastoreo excesivo, a la sequía estacional y al cambio climático

detritivore: organism that feeds on plant and animal remains and other dead matter (71)

detritívoro: organismo que se alimenta de restos animales y vegetales y demás materia orgánica muerta

deuterostome: group of animals in which the blastopore becomes an anus, and the mouth is formed from the second opening that develops (739)

deuteróstomos: grupo de animales en los cuales el blastoporo se convierte en ano y la boca se forma a partir del desarrollo de una segunda abertura

diaphragm: large flat muscle at the bottom of the chest cavity that helps with breathing (967)

diafragma: músculo plano y grande ubicado en la parte inferior de la cavidad torácica que participa en la respiración

dicot: angiosperm with two seed leaves in its ovary (652)

dicotiledónea: angiosperma con dos cotiledones (hojas embrionarias) en su ovario

differentiation: process in which cells become specialized in structure and function (293, 381)

diferenciación: proceso en el cual las células se especializan en estructura y función

diffusion: process by which particles tend to move from an area where they are more concentrated to an area where they are less concentrated (208)

difusión: proceso por el cual las partículas tienden a desplazarse desde un área donde están más concentradas hacia un área donde están menos concentradas

digestive tract: tube that begins at the mouth and ends at the anus (784)

tracto digestivo: tubo que comienza en la boca y termina en el ano

diploid: term used to refer to a cell that contains two sets of homologous chromosomes (323)

diploide: término utilizado para referirse a una célula que contiene dos series de cromosomas homólogos

directional selection: form of natural selection in which individuals at one end of a distribution curve have higher fitness than individuals in the middle or at the other end of the curve (489)

selección direccional: forma de selección natural en la cual los individuos que se hallan en un extremo de la curva de distribución poseen una mayor capacidad de adaptación que los individuos que se hallan en el centro o en el otro extremo de la curva

disruptive selection: natural selection in which individuals at the upper and lower ends of the curve have higher fitness than individuals near the middle of the curve (489)

selección disruptiva: forma de selección natural en la cual los individuos que se hallan en los extremos superior e inferior de la curva poseen una mayor capacidad de adaptación que los individuos que se hallan cerca del centro de la curva

DNA fingerprinting: tool used by biologists that analyzes an individual's unique collection of DNA restriction fragments; used to determine whether two samples of genetic material are from the same person (433)

prueba de ADN: herramienta utilizada por los biólogos mediante la cual se analiza el conjunto de los fragmentos de restricción de ADN exclusivo de cada individuo; utilizada para determinar si dos muestras de material genético pertenecen a la misma persona; también llamada huella genética o análisis de ADN

DNA microarray: glass slide or silicon chip that carries thousands of different kinds of single-stranded DNA fragments arranged in a grid. A DNA microarray is used to detect and measure the expression of thousands of genes at one time (432)

chip de ADN: superficie de vidrio o chip de silicona que contiene miles de diferentes tipos de fragmentos de ADN de una sola cadena dispuestos en una cuadrícula. Un chip de ADN se utiliza para detectar y medir la expresión de miles de genes a la vez

DNA polymerase: principle enzyme involved in DNA replication (351)

ADN polimerasa: enzima fundamental involucrada en la replicación del ADN

domain: larger, more inclusive taxonomic category than a kingdom (525)

dominio: categoría taxonómica más amplia e inclusiva que un reino

dopamine: neurotransmitter that is associated with the brain's pleasure and reward centers (904)

dopamina: neurotransmisor que está asociado con los centros de placer y de recompensa del cerebro

dormancy: period of time during which a plant embryo is alive but not growing (706)

latencia: período de tiempo durante el cual un embrión vegetal está vivo pero no crece

double fertilization: process of fertilization in angiosperms in which the first event produces the zygote, and the second, the endosperm within the seed (700)

dobles fertilización: proceso de fecundación de las angiospermas en el cual se produce, en el primer suceso el cigoto y en el segundo, el endospermo dentro de la semilla

E

ecological footprint: total amount of functioning ecosystem needed both to provide the resources a human population uses and to absorb the wastes that population generates (173)

huella ecológica: cantidad total de ecosistema en funcionamiento necesaria para proporcionar los recursos que utiliza una población humana y para absorber los residuos que genera esa población

ecological hot spot: small geographic area where significant numbers of habitats and species are in immediate danger of extinction (171)

zona de conflicto ecológico: área geográfica pequeña donde cantidades importantes de hábitats y especies se hallan en peligro de extinción inmediato

ecological pyramid: illustration of the relative amounts of energy or matter contained within each trophic level in a given food chain or food web (77)

pirámide ecológica: ilustración de las cantidades relativas de energía o materia contenidas dentro de cada nivel trófico en una cadena o red alimenticia dada

ecological succession: series of gradual changes that occur in a community following a disturbance (106)

sucesión ecológica: serie de cambios graduales que ocurren en una comunidad después de una alteración

ecology: scientific study of interactions among organisms and between organisms and their environment (65)

ecología: estudio científico de las interacciones entre organismos y entre los organismos y su medio ambiente

ecosystem: all the organisms that live in a place, together with their nonliving environment (65)

ecosistema: todos los organismos que viven en un lugar, junto con su medio ambiente inanimado

ecosystem diversity: variety of habitats, communities, and ecological processes in the biosphere (166)

diversidad de ecosistemas: variedad de hábitats, comunidades y procesos ecológicos que existen en la biósfera

ectoderm: outermost germ layer; produces sense organs, nerves, and outer layer of skin (738)

ectodermo: capa embrionaria más externa; desarrolla órganos sensoriales, nervios y la capa exterior de la piel

ectotherm: animal whose body temperature is determined by the temperature of its environment (829)

animal de sangre fría: animal cuya temperatura corporal está determinada por la temperatura de su medio ambiente

electron: negatively charged particle; located in the space surrounding the nucleus (34)

electrón: partícula con carga negativa; ubicada en el espacio que rodea al núcleo

electron transport chain: series of electron carrier proteins that shuttle high-energy electrons during ATP-generating reactions (236)

cadena de transporte de electrones: serie de proteínas transportadoras que llevan electrones de alta energía, durante las reacciones generadoras de ATP

element: pure substance that consists entirely of one type of atom (35)

elemento: sustancia pura que consiste íntegramente en un tipo de átomo

embryo: developing stage of a multicellular organism (292)

embrión: una de las etapas de desarrollo de un organismo multicelular

embryo sac: female gametophyte within the ovule of a flowering plant (699)

saco embrionario: gametofito femenino dentro del óvulo de una planta que produce flores

emerging disease: disease that appears in the population for the first time, or an old disease that suddenly becomes harder to control (590)

enfermedad emergente: enfermedad que aparece en una población por primera vez o una enfermedad antigua que de pronto se vuelve más difícil de controlar

emigration: movement of individuals out of an area (132)

emigración: desplazamiento de individuos fuera de un área

endocrine gland: gland that releases its secretions (hormones) directly into the blood, which transports the secretions to other areas of the body (828, 979)

glándula endocrina: glándula que vierte sus secreciones (hormonas) directamente en la sangre, para ser transportadas a otras áreas del cuerpo

endoderm: innermost germ layer; develops into the linings of the digestive tract and much of the respiratory system (738)

endodermo: capa embrionaria más interna, a partir de la cual se desarrollan los revestimientos del tracto digestivo y gran parte del sistema respiratorio

endodermis: in plants, layer of ground tissue that completely encloses the vascular cylinder (670)

endodermis: en las plantas, un capa de tejido fundamental que envuelve completamente al cilindro vascular

endoplasmic reticulum: internal membrane system found in eukaryotic cells; place where lipid components of the cell membrane are assembled (200)

retículo endoplasmático: sistema de membranas internas de las células eucariotas; lugar donde se reúnen los componentes lipídicos de la membrana celular

endoskeleton: internal skeleton; structural support system within the body of an animal (815)

endoesqueleto: esqueleto interno; sistema estructural de sostén dentro del cuerpo de un animal

Glossary (continued)

endosperm: food-rich tissue that nourishes a seedling as it grows (700)

endospermo: tejido nutritivo que alimenta a una plántula a medida que crece

endospore: structure produced by prokaryotes in unfavorable conditions; a thick internal wall that encloses the DNA and a portion of the cytoplasm (583)

endospora: estructura producida por los procariotas en condiciones desfavorables; una gruesa pared interna que encierra al ADN y a una parte del citoplasma

endosymbiotic theory: theory that proposes that eukaryotic cells formed from a symbiotic relationship among several different prokaryotic cells (556)

teoría endosimbiótica: teoría que propone que las células eucariotas se formaron a partir de una relación simbiótica entre varias células procariotas distintas

endotherm: animal whose body temperature is regulated, at least in part, using heat generated within its body (829)

endotermo: animal cuya temperatura corporal se regula, al menos en parte, utilizando el calor generado dentro de su cuerpo

enzyme: protein catalyst that speeds up the rate of specific biological reactions (52)

enzima: proteína catalizadora que acelera la velocidad de reacciones biológicas específicas

epidermis: in plants, single layer of cells that makes up dermal tissue (665); in humans, the outer layer of the skin (936)

epidermis: en las plantas, única capa de células que forma el tejido dérmico; en los seres humanos, la capa exterior de la piel

epididymis: organ in the male reproductive system in which sperm mature and are stored (989)

epidídimo: órgano del sistema reproductor masculino en el cual el esperma madura y se almacena

epinephrine: hormone released by the adrenal glands that increases heart rate and blood pressure and prepares the body for intense physical activity; also called adrenaline (983)

epinefrina: hormona liberada por las glándulas adrenales que aumenta la frecuencia cardíaca y la presión sanguínea y prepara al cuerpo para una actividad física intensa; también llamada adrenalina

epithelial tissue: type of tissue that lines the interior and exterior body surfaces (863)

tejido epitelial: tipo de tejido que reviste el interior y el exterior de las superficies del cuerpo

era: major division of geologic time; usually divided into two or more periods (543)

era: división principal del tiempo geológico; usualmente dividida en dos o más períodos

esophagus: tube connecting the mouth to the stomach (877)

esófago: tubo que conecta la boca con el estómago

estuary: kind of wetland formed where a river meets the ocean (119)

estuario: tipo de humedal que se forma donde un río se une al océano

ethylene: plant hormone that stimulates fruits to ripen (711)

etileno: hormona vegetal que estimula la maduración de los frutos

Eukarya: domain consisting of all organisms that have a nucleus; includes protists, plants, fungi, and animals (526)

Eukarya (eucariontes): dominio compuesto por todos los organismos que tienen un núcleo; incluye a los protistas, las plantas, los hongos y los animales

eukaryote: organism whose cells contain a nucleus (193)

eucariota: organismo cuyas células contienen un núcleo

evolution: change over time; the process by which modern organisms have descended from ancient organisms (450)

evolución: cambio en el transcurso del tiempo; el proceso por el cual los organismos actuales se derivaron de los organismos antiguos

excretion: process by which metabolic wastes are eliminated from the body (794, 882)

excreción: proceso por el cual se eliminan del cuerpo los residuos metabólicos

exocrine gland: gland that releases its secretions, through tubelike structures called ducts, directly into an organ or out of the body (979)

glándula exocrina: glándula que vierte sus secreciones directamente a un órgano o al exterior del cuerpo a través de estructuras tubulares denominadas conductos

exon: expressed sequence of DNA; codes for a protein (365)

exón: secuencia expresada de ADN; codifica una porción específica de una proteína

exoskeleton: external skeleton; tough external covering that protects and supports the body of many invertebrates (815)

exoesqueleto: esqueleto externo; cubierta externa dura que protege y sostiene el cuerpo de muchos invertebrados

exponential growth: growth pattern in which the individuals in a population reproduce at a constant rate (132)

crecimiento exponencial: patrón de crecimiento en el cual los individuos de una población se reproducen a una tasa constante

extinct: term used to refer to a species that has died out and has no living members (538)

extinto: término utilizado para referirse a una especie que ha desaparecido y de la que ninguno de sus miembros está vivo

extracellular digestion: type of digestion in which food is broken down outside the cells in a digestive system and then absorbed (784)

digestión extracelular: tipo de digestión en la cual el alimento es degradado fuera de las células dentro de un sistema digestivo y luego se absorbe

F

facilitated diffusion: process of diffusion in which molecules pass across the membrane through cell membrane channels (209)

difusión facilitada: proceso de difusión en el cual las moléculas atraviesan la membrana a través de los canales de la membrana celular

family: in classification, group of similar genera (513)

familia: en la clasificación, grupo de géneros similares

fat: lipid; made up of fatty acids and glycerol; type of nutrient that protects body organs, insulates the body, and stores energy (870)

grasa: lípido; compuesto de ácidos grasos y glicerina; tipo de nutriente que protege a los órganos del cuerpo, actúa como aislante térmico y almacena energía

feedback inhibition: process in which a stimulus produces a response that opposes the original stimulus; also called negative feedback (732, 865)

inhibición de la retroalimentación: proceso en el cual un estímulo produce una respuesta que se opone al estímulo original; también llamada retroalimentación negativa

fermentation: process by which cells release energy in the absence of oxygen (262)

fermentación: proceso por el cual las células liberan energía en ausencia de oxígeno

fertilization: process in sexual reproduction in which male and female reproductive cells join to form a new cell (309)

fecundación: proceso de la reproducción sexual en el cual las células reproductoras masculinas y femeninas se unen para formar una célula nueva

fetus: a human embryo after eight weeks of development (998)

feto: un embrión humano después de ocho semanas de desarrollo

fever: increased body temperature that occurs in response to infection (1015)

fiebre: temperatura corporal elevada que se produce como respuesta a una infección

filtration: process of passing a liquid or gas through a filter to remove wastes (884)

filtración: proceso de hacer pasar un líquido o un gas a través de un filtro para quitar los residuos

fitness: how well an organism can survive and reproduce in its environment (461)

aptitud: capacidad de un organismo para sobrevivir y reproducirse en su medio ambiente

flagellum (pl. flagella): structure used by protists for movement; produces movement in a wavelike motion (607)

flagelo: estructura utilizada por los protistas para desplazarse; produce un desplazamiento con un movimiento semejante al de una onda

food chain: series of steps in an ecosystem in which organisms transfer energy by eating and being eaten (73)

cadena alimenticia: serie de pasos en un ecosistema, en que los organismos transfieren energía al alimentarse y al servir de alimento

food vacuole: small cavity in the cytoplasm of a protist that temporarily stores food (612)

vacuola alimenticia: pequeña cavidad situada en el citoplasma de los protistas que almacena alimentos por algún tiempo

food web: network of complex interactions formed by the feeding relationships among the various organisms in an ecosystem (74)

red alimenticia: red de interacciones complejas constituida por las relaciones alimenticias entre los varios organismos de un ecosistema

forensics: scientific study of crime scene evidence (433)

ciencias forenses: estudio científico de las pruebas en la escena del crimen

fossil: preserved remains or traces of ancient organisms (452)

fósil: restos conservados o vestigios de organismos antiguos

founder effect: change in allele frequencies as a result of the migration of a small subgroup of a population (490)

efecto fundador: cambio en las frecuencias alélicas como consecuencia de la migración de un subgrupo pequeño de una población

frameshift mutation: mutation that shifts the “reading frame” of the genetic message by inserting or deleting a nucleotide (373)

mutación de corrimiento de estructura: mutación que cambia el “marco de lectura” del mensaje genético insertando o eliminando un nucleótido

fruit: structure in angiosperms that contains one or more matured ovaries (651)

fruto: estructura de las Angiospermas que contiene uno o más ovarios maduros

fruiting body: reproductive structure of a fungus that grows from the mycelium (619)

cuerpo fructífero: estructura reproductora de los hongos que se desarrolla a partir del micelio

Glossary (continued)

G

gamete: sex cell (312)

gameto: célula sexual

gametophyte: gamete-producing plant; multicellular haploid phase of a plant life cycle (637)

gametofito: planta que produce gametos; fase haploide multicelular del ciclo vital de una planta

ganglion (pl. ganglia): group of interneurons (810)

ganglio nervioso: grupo de interneuronas

gastrovascular cavity: digestive chamber with a single opening (784)

cavidad gastrovascular: cámara digestiva con una sola apertura

gastrulation: process of cell migration that results in the formation of the three cell layers—the ectoderm, the mesoderm, and the endoderm (997)

gastrulación: proceso de migración celular que da por resultado la formación de las tres capas celulares—el ectodermo, el mesodermo y el endodermo

gel electrophoresis: procedure used to separate and analyze DNA fragments by placing a mixture of DNA fragments at one end of a porous gel and applying an electrical voltage to the gel (404)

electroforesis en gel: procedimiento utilizado para separar y analizar fragmentos de ADN colocando una mezcla de fragmentos de ADN en un extremo de un gel poroso y aplicando al gel un voltaje eléctrico

gene: sequence of DNA that codes for a protein and thus determines a trait; factor that is passed from parent to offspring (310)

gen: secuencia de ADN que contiene el código de una proteína y por lo tanto determina un rasgo; factor que se transmite de un progenitor a su descendencia

gene expression: process by which a gene produces its product and the product carries out its function (370)

expresión génica: proceso por el cual un gen produce su producto y el producto lleva a cabo su función

gene pool: all the genes, including all the different alleles for each gene, that are present in a population at any one time (483)

caudal de genes: todos los genes, incluidos todos los alelos diferentes para cada gen, que están presentes en una población en un momento dado

gene therapy: process of changing a gene to treat a medical disease or disorder. An absent or faulty gene is replaced by a normal working gene. (431)

terapia genética o génica: proceso en el cual se cambia un gen para tratar una enfermedad o una afección médica. Se reemplaza un gen ausente o defectuoso con un gen de funcionamiento normal.

genetic code: collection of codons of mRNA, each of which directs the incorporation of a particular amino acid into a protein during protein synthesis (366)

código genético: conjunto de codones del ARN mensajero, cada uno de los cuales dirige la incorporación de un aminoácido en particular a una proteína durante la síntesis proteica

genetic diversity: sum total of all the different forms of genetic information carried by a particular species, or by all organisms on Earth (166)

diversidad genética: suma de todas las distintas formas de información genética portadas por una especie en particular, o por todos los organismos de la Tierra

genetic drift: random change in allele frequency caused by a series of chance occurrences that cause an allele to become more or less common in a population (490)

tendencia genética: alteración al azar de la frecuencia alélica causada por una serie de acontecimientos aleatorios que hacen que un alelo se vuelva más o menos común en una población

genetic equilibrium: situation in which allele frequencies in a population remain the same (491)

equilibrio genético: situación en la cual las frecuencias alélicas de una población se mantienen iguales

genetic marker: alleles that produce detectable phenotypic differences useful in genetic analysis (425)

marcador genético: alelos que producen diferencias fenotípicas detectables, útiles en el análisis genético

genetics: scientific study of heredity (308)

genética: estudio científico de la herencia

genome: entire set of genetic information that an organism carries in its DNA (392)

genoma: todo el conjunto de información genética que un organismo transporta en su ADN

genomics: study of whole genomes, including genes and their functions (407)

genómica: estudio integral de los genomas, incluyendo los genes y sus funciones

genotype: genetic makeup of an organism (315)

genotipo: composición genética de un organismo

genus: group of closely related species; the first part of the scientific name in binomial nomenclature (512)

género: grupo de especies relacionadas estrechamente; la primera parte del nombre científico en la nomenclatura binaria

geographic isolation: form of reproductive isolation in which two populations are separated by geographic barriers such as rivers, mountains, or bodies of water, leading to the formation of two separate subspecies (495)

aislamiento geográfico: forma de aislamiento reproductivo en el cual dos poblaciones están separadas por barreras geográficas como ríos, montañas o masas de agua, dando lugar a la formación de dos subespecies distintas

geologic time scale: timeline used to represent Earth's history (542)

escala de tiempo geológico: línea cronológica utilizada para representar la historia de la Tierra

germ theory of disease: idea that infectious diseases are caused by microorganisms (1010)

teoría microbiana de la enfermedad: idea de que las enfermedades infecciosas son causadas por microorganismos

germination: resumption of growth of the plant embryo following dormancy (706)

germinación: reanudación del crecimiento del embrión de la planta después de la latencia

giberellin: plant hormone that stimulates growth and may cause dramatic increases in size (711)

giberelina: hormona de las plantas que estimula el crecimiento y puede causar aumentos significativos de tamaño

gill: feathery structure specialized for the exchange of gases with water (788)

branquia: estructura tegumentaria especializada en el intercambio de los gases con el agua

global warming: increase in the average temperatures on Earth (177)

calentamiento global: aumento del promedio de temperatura en la Tierra

glomerulus: small network of capillaries encased in the upper end of the nephron; where filtration of the blood takes place (884)

glomérulo: pequeña red de capilares encerrados en el extremo superior del nefrón; donde tiene lugar la filtración de la sangre

glycolysis: first set of reactions in cellular respiration in which a molecule of glucose is broken into two molecules of pyruvic acid (254)

glicólisis: primer conjunto de reacciones en la respiración celular, en las cuales una molécula de glucosa se descompone en dos moléculas de ácido pirúvico

Golgi apparatus: organelle in cells that modifies, sorts, and packages proteins and other materials from the endoplasmic reticulum for storage in the cell or release outside the cell (201)

aparato de Golgi: orgánulo de las células que modifica, clasifica y agrupa las proteínas y otras sustancias provenientes del retículo endoplasmático para almacenarlas en la célula o enviarlas fuera de la célula

gradualism: the evolution of a species by gradual accumulation of small genetic changes over long periods of time (549)

gradualismo: evolución de una especie por la acumulación gradual de pequeños cambios genéticos ocurridos en el transcurso de largos períodos de tiempo

grafting: method of propagation used to reproduce seedless plants and varieties of woody plants that cannot be propagated from cuttings (703)

injerto: método de propagación utilizado para reproducir plantas sin semillas y algunas variedades de plantas leñosas que no pueden propagarse a partir de esquejes

gravitropism: response of a plant to the force of gravity (712)

geotropismo: respuesta de una planta a la fuerza de la gravedad

green revolution: development of highly productive crop strains and use of modern agriculture techniques to increase yields of food crops (717)

revolución verde: el desarrollo de variedades de cultivos altamente productivos y el uso de técnicas agrícolas modernas para aumentar el rendimiento de los cultivos

greenhouse effect: process in which certain gases (carbon dioxide, methane, and water vapor) trap sunlight energy in Earth's atmosphere as heat (97)

efecto invernadero: proceso mediante el cual ciertos gases (dióxido de carbono, metano y vapor de agua) atrapan la energía de la luz solar en la atmósfera terrestre en forma de calor

growth factor: one of a group of external regulatory proteins that stimulate the growth and division of cells (287)

factor de crecimiento: una de las proteínas del grupo de proteínas reguladoras externas que estimulan el crecimiento y la división de las células

guard cell: specialized cell in the epidermis of plants that controls the opening and closing of stomata (682)

célula de guarda (o célula oclusiva): célula especializada de la epidermis vegetal que controla la apertura y el cierre de los estomas

gullet: indentation in one side of a ciliate that allows food to enter the cell (612)

citofaringe: hendidura a un costado de un ciliado que permite que los alimentos entren a la célula

gymnosperm: group of seed plants that bear their seeds directly on the scales of cones (646)

Gimnospermas: grupo de plantas fanerógamas que tienen sus semillas directamente sobre las escamas de los conos

H

habitat: area where an organism lives, including the biotic and abiotic factors that affect it (99)

hábitat: área donde vive un organismo, incluidos los factores bióticos y abióticos que lo afectan

Glossary *(continued)*

habitat fragmentation: splitting of ecosystems into pieces (168)

fragmentación del hábitat: la ruptura, o separación en partes, de los ecosistemas

habituation: type of learning in which an animal decreases or stops its response to a repetitive stimulus that neither rewards nor harms the animal (842)

habituación: tipo de aprendizaje en el cual un animal disminuye o cancela su respuesta ante un estímulo repetido que no recompensa ni castiga al animal

hair follicle: tubelike pockets of epidermal cells that extend into the dermis; cells at the base of hair follicles produce hair (937)

fóliculo piloso: sacos tubulares de las células epidérmicas que se prolongan hacia el interior de la dermis; las células situadas en la base de los folículos pilosos, producen pelo

half life: length of time required for half of the radioactive atoms in a sample to decay (540)

vida media: período de tiempo requerido para que se desintegre la mitad de los átomos radiactivos de una muestra

haploid: term used to refer to a cell that contains only a single set of genes (323)

haploide: tipo de célula que posee un solo juego de cromosomas

Hardy-Weinberg principle: principle that states that allele frequencies in a population remain constant unless one or more factors cause those frequencies to change (491)

principio de Hardy-Weinberg: el principio que afirma que las frecuencias alélicas de una población permanecen constantes a menos que uno o más factores ocasionen que esas frecuencias cambien

Haversian canal: one of a network of tubes running through compact bone that contains blood vessels and nerves (924)

conducto de Havers: uno de los tubos de una red que recorre longitudinalmente el hueso compacto y contiene vasos sanguíneos y nervios

heart: hollow muscular organ that pumps blood throughout the body (791)

corazón: órgano muscular hueco que bombea la sangre a todo el cuerpo

heartwood: in a woody stem, the older xylem near the center of the stem that no longer conducts water (678)

duramen: en un tallo leñoso, el xilema más viejo situado cerca del centro del tallo que ya no conduce agua

hemoglobin: iron-containing protein in red blood cells that binds oxygen and transports it to the body (954)

hemoglobina: proteína de los glóbulos rojos que contiene hierro, fija el oxígeno y lo transporta al organismo

herbaceous plant: type of plant that has smooth and non-woody stems; includes dandelions, zinnias, petunias, and sunflowers (653)

planta herbácea: tipo de planta que tiene tallos blandos y no leñosos; incluye dientes de león, cinias, petunias y girasoles

herbivore: organism that obtains energy by eating only plants (71)

herbívoros: organismo que obtiene energía alimentándose solo de plantas

herbivory: interaction in which one animal (the herbivore) feeds on producers (such as plants) (102)

herbivorismo: interacción en la cual un animal (el herbívoro) se alimenta de productores (como las plantas)

heterotroph: organism that obtains food by consuming other living things; also called a consumer (71, 228)

heterótrofo: organismo que obtiene su alimento consumiendo otros seres vivos; también llamado consumidor

heterozygous: having two different alleles for a particular gene (314)

heterocigota: que tiene dos alelos diferentes para un gen dado

histamine: chemical released by mast cells that increases the flow of blood and fluids to the infected area during an inflammatory response (1014)

histamina: sustancia química liberada por los mastocitos que aumenta el flujo de la sangre y los fluidos hacia el área infectada durante una respuesta inflamatoria

homeobox gene: The homeobox is a DNA sequence of approximately 130 base pairs, found in many homeotic genes that regulate development. Genes containing this sequence are known as homeobox genes, and they code for transcription factors, proteins that bind to DNA, and they also regulate the expression of other genes. (382)

gen homeobox: el homeobox es una secuencia de ADN de aproximadamente 130 pares de bases, presente en muchos genes homeóticos que regulan el desarrollo. Los genes que contienen esta secuencia se denominan genes homeobox y codifican los factores de transcripción, las proteínas que se adhieren al ADN y regulan la expresión de otros genes

homeostasis: relatively constant internal physical and chemical conditions that organisms maintain (19, 214, 865)

homeostasis: las condiciones internas, químicas y físicas, que los organismos mantienen relativamente constantes

homeotic gene: a class of regulatory genes that determine the identity of body parts and regions in an animal embryo. Mutations in these genes can transform one body part into another (382)

gen homeótico: tipo de genes reguladores que determinan la identidad de las partes y regiones del cuerpo en un embrión animal. Las mutaciones de estos genes pueden transformar una parte del cuerpo en otra

hominine: hominoid lineage that led to humans (767)

homínino: linaje hominoide que dio lugar a los seres humanos

hominoid: group of anthropoids that includes gibbons, orangutans, gorillas, chimpanzees, and humans (767)

homínido: grupo de antropoides que incluye a los gibones, orangutanes, gorilas, chimpancés y seres humanos

homologous: term used to refer to chromosomes in which one set comes from the male parent and one set comes from the female parent (323)

homólogos: término utilizado para referirse a los cromosomas en los que un juego proviene del progenitor masculino y un juego proviene del progenitor femenino

homologous structures: structures that are similar in different species of common ancestry (468)

estructuras homólogas: estructuras que son similares en distintas especies que tienen un ancestro común

homozygous: having two identical alleles for a particular gene (314)

homocigota: que tiene dos alelos idénticos para un gen dado

hormone: chemical produced in one part of an organism that affects another part of the same organism (708, 978)

hormona: sustancia química producida en una parte de un organismo que afecta a otra parte del mismo organismo

Hox gene: a group of homeotic genes clustered together that determine the head to tail identity of body parts in animals. All hox genes contain the homeobox DNA sequence. (382)

gen Hox: grupo de genes homeóticos agrupados en un conjunto que determinan la identidad posicional de las partes del cuerpo de los animales. Todos los genes Hox contienen la secuencia de ADN homeobox

humoral immunity: immunity against antigens in body fluids, such as blood and lymph (1016)

inmunidad humoral: inmunidad contra los antígenos presentes en los fluidos corporales, como la sangre y la linfa

humus: material formed from decaying leaves and other organic matter (114)

humus: material formado a partir de hojas en descomposición y otros materiales orgánicos

hybrid: offspring of crosses between parents with different traits (309)

híbrido: descendencia del cruce entre progenitores que tienen rasgos diferentes

hybridization: breeding technique that involves crossing dissimilar individuals to bring together the best traits of both organisms (419)

hibridación: técnica de cría que consiste en cruzar individuos diferentes para reunir los mejores rasgos de ambos organismos

hydrogen bond: weak attraction between a hydrogen atom and another atom (41)

enlace de hidrógeno: atracción débil entre un átomo de hidrógeno y otro átomo

hydrostatic skeleton: skeleton made of fluid-filled body segments that work with muscles to allow the animal to move (814)

esqueleto hidrostático: esqueleto constituido por segmentos corporales llenos de fluido que trabajan con los músculos para permitir el movimiento del animal

hypertonic: when comparing two solutions, the solution with the greater concentration of solutes (210)

hipertónica: al comparar dos soluciones, la solución que tiene la mayor concentración de solutos

hypha (pl. hyphae): one of many long, slender filaments that makes up the body of a fungus (619)

hifa: uno de muchos filamentos largos y delgados que componen el cuerpo de un hongo

hypothalamus: structure of the brain that acts as a control center for recognition and analysis of hunger, thirst, fatigue, anger, and body temperature (903)

hipotálamo: estructura del cerebro que funciona como un centro de control para el reconocimiento y el análisis del hambre, la sed, la fatiga, el enojo y la temperatura corporal

hypothesis: possible explanation for a set of observations or possible answer to a scientific question (7)

hipótesis: explicación posible para un conjunto de observaciones o respuesta posible a una pregunta científica

hypotonic: when comparing two solutions, the solution with the lesser concentration of solutes (210)

hipotónica: al comparar dos soluciones, la solución que tiene la menor concentración de solutos

immigration: movement of individuals into an area occupied by an existing population (132)

inmigración: desplazamiento de individuos a un área ocupada por una población ya existente

immune response: the body's specific recognition, response, and memory to a pathogen attack (1016)

respuesta inmune: reconocimiento, respuesta y memoria específicos que tiene el cuerpo respecto al ataque de un organismo patógeno

implantation: process in which the blastocyst attaches to the wall of the uterus (996)

implantación: proceso en el cual la blástula se adhiere a la pared del útero

Glossary (continued)

imprinting: type of behavior based on early experience; once imprinting has occurred, the behavior cannot be changed (844)

impronta: tipo de comportamiento basado en las primeras experiencias; una vez que ocurre la impronta, el comportamiento no puede cambiarse

inbreeding: continued breeding of individuals with similar characteristics to maintain the derived characteristics of a kind of organism (419)

endogamia: la cría continua de individuos con características semejantes para mantener las características derivadas de un tipo de organismo

incomplete dominance: situation in which one allele is not completely dominant over another allele (319)

dominancia incompleta: situación en la cual un alelo no es completamente dominante sobre otro alelo

independent assortment: one of Mendel's principles that states that genes for different traits can segregate independently during the formation of gametes (317)

distribución independiente: uno de los principios de Mendel que establece que los genes para rasgos diferentes pueden segregarse independientemente durante la formación de los gametos

independent variable: factor in a controlled experiment that is deliberately changed; also called manipulated variable (7)

variable independiente: en un experimento controlado, el factor que se modifica a propósito; también llamada variable manipulada

index fossil: distinctive fossil that is used to compare the relative ages of fossils (540)

fósil guía: fósil distintivo usado para comparar las edades relativas de los fósiles

infectious disease: disease caused by a microorganism that disrupts normal body functions (1010)

enfermedad infecciosa: enfermedad causada por un microorganismo que altera las funciones normales del cuerpo

inference: a logical interpretation based on prior knowledge and experience (7)

inferencia: interpretación lógica basada en la experiencia y en conocimientos previos

inflammatory response: nonspecific defense reaction to tissue damage caused by injury or infection (1014)

respuesta inflamatoria: reacción defensiva no específica al daño causado a los tejidos por una herida o una infección

innate behavior: type of behavior in which the behavior appears in fully functional form the first time it is performed even though the animal has had no previous experience with the stimuli to which it responds; also called instinct (841)

comportamiento innato: tipo de comportamiento en el cual la conducta aparece en forma completamente funcional la primera vez que se lleva a cabo, aunque el animal no tenga ninguna experiencia previa con los estímulos a los que responde; también llamado instinto

insight learning: type of behavior in which an animal applies something it has already learned to a new situation, without a period of trial and error; also called reasoning (843)

aprendizaje por discernimiento: tipo de comportamiento en el cual un animal aplica algo que ya ha aprendido a una situación nueva, sin un período de ensayo y error; también llamado razonamiento

interferon: one of a group of proteins that help cells resist viral infection (1015)

interferón: un tipo de proteína que ayuda a las células a combatir las infecciones virales

interneuron: type of neuron that processes information and may relay information to motor neurons (809)

interneurona: tipo de neurona que procesa información y la puede transmitir para estimular las neuronas

interphase: period of the cell cycle between cell divisions (281)

interfase: período del ciclo celular entre las divisiones celulares

intracellular digestion: type of digestion in which food is digested inside specialized cells that pass nutrients to other cells by diffusion (784)

digestión intracelular: tipo de digestión en la cual los alimentos se digieren dentro de células especializadas que pasan los nutrientes a otras células mediante difusión

intron: sequence of DNA that is not involved in coding for a protein (365)

intrón: secuencia de ADN que no participa en la codificación de una proteína

invertebrate: animal that lacks a backbone, or vertebral column (730)

invertebrado: animal que carece de columna vertebral

ion: atom that has a positive or negative charge (37)

ión: átomo que tiene una carga positiva o negativa

ionic bond: chemical bond formed when one or more electrons are transferred from one atom to another (37)

enlace iónico: enlace químico que se forma cuando uno o más electrones se transfieren de un átomo a otro

iris: colored part of the eye (912)

iris: parte coloreada del ojo

isotonic: when the concentration of two solutions is the same (210)

isotónica: cuando la concentración de dos soluciones es la misma

isotope: one of several forms of a single element, which contains the same number of protons but different numbers of neutrons (35)

isótopo: cada una de las diferentes formas de un único elemento, que contiene la misma cantidad de protones pero cantidades distintas de neutrones

J

joint: place where one bone attaches to another bone (816, 926)

articulación: sitio donde un hueso se une a otro hueso

K

karyotype: micrograph of the complete diploid set of chromosomes grouped together in pairs, arranged in order of decreasing size (392)

cariotipo: micrografía de la totalidad del conjunto diploide de cromosomas agrupados en pares, ordenados por tamaño decreciente

keratin: tough fibrous protein found in skin (936)

queratina: proteína fibrosa y resistente que se halla en la piel

keystone species: single species that is not usually abundant in a community yet exerts strong control on the structure of a community (103)

especie clave: especie que habitualmente no es abundante en una comunidad y sin embargo ejerce un fuerte control sobre la estructura de esa comunidad

kidney: an organ of excretion that separates wastes and excess water from the blood (795)

riñón: órgano excretor que separa los residuos y el exceso de agua de la sangre

kin selection: theory that states that helping relatives can improve an individual's evolutionary fitness because related individuals share a large proportion of their genes (849)

selección de parentesco: teoría que enuncia que ayudar a los congéneres puede mejorar la aptitud evolutiva de un individuo porque los individuos emparentados comparten una gran parte de sus genes

kingdom: largest and most inclusive group in classification (514)

reino: en la clasificación, el grupo mayor y más inclusivo

Koch's postulates: set of guidelines developed by Koch that helps identify the microorganism that causes a specific disease (1011)

postulados de Koch: conjunto de pautas desarrollado por Koch que ayuda a identificar al microorganismo que causa una enfermedad específica

Krebs cycle: second stage of cellular respiration in which pyruvic acid is broken down into carbon dioxide in a series of energy-extracting reactions (256)

ciclo de Krebs: segunda fase de la respiración celular en la cual el ácido pirúvico se descompone en dióxido de carbono en una serie de reacciones que liberan energía

L

language: system of communication that combines sounds, symbols, and gestures according to a set of rules about sequence and meaning, such as grammar and syntax (851)

lenguaje: sistema de comunicación que combina sonidos, símbolos y gestos según un conjunto de reglas sobre la secuencia y el significado, como la gramática y la sintaxis

large intestine: organ in the digestive system that removes water from the undigested material that passes through it; also called colon (881)

intestino grueso: órgano del sistema digestivo que extrae el agua del material no digerido que pasa por él; también llamado colon

larva (pl. larvae): immature stage of an organism (756)

larva: etapa inmadura de un organismo

larynx: structure in the throat that contains the vocal cords (964)

laringe: órgano situado en la garganta que contiene las cuerdas vocales

learning: changes in behavior as a result of experience (842)

aprendizaje: cambios en el comportamiento a consecuencia de la experiencia

lens: structure in the eye that focuses light rays on the retina (912)

crystalino: estructura del ojo que enfoca los rayos luminosos en la retina

lichen: symbiotic association between a fungus and a photosynthetic organism (623)

liquen: asociación simbiótica entre un hongo y un organismo fotosintético

ligament: tough connective tissue that holds bones together in a joint (816, 927)

ligamento: tejido conectivo resistente que mantiene unidos a los huesos en una articulación

light-dependent reactions: set of reactions in photosynthesis that use energy from light to produce ATP and NADPH (233)

reacciones dependientes de la luz: en la fotosíntesis, conjunto de reacciones que emplean la energía proveniente de la luz para producir ATP y NADPH

Glossary (continued)

light-independent reactions: set of reactions in photosynthesis that do not require light; energy from ATP and NADPH is used to build high-energy compounds such as sugar; also called the Calvin cycle (233)

reacciones independientes de la luz: en la fotosíntesis, conjunto de reacciones que no necesitan luz; la energía proveniente del ATP y del NADPH se emplea para construir compuestos con gran contenido energético, como el azúcar; también llamado ciclo de Calvin

lignin: substance in vascular plants that makes cell walls rigid (666)

lignina: sustancia de las plantas vasculares que hace rígidas a las paredes celulares

limiting factor: factor that causes population growth to decrease (137)

factor limitante: un factor que hace disminuir el crecimiento de la población

limiting nutrient: single essential nutrient that limits productivity in an ecosystem (85)

nutriente limitante: un solo nutriente esencial que limita la productividad de un ecosistema

lipid: macromolecule made mostly from carbon and hydrogen atoms; includes fats, oils, and waxes (47)

lípid: macromolécula compuesta principalmente por átomos de carbono e hidrógeno; incluye las grasas, los aceites y las ceras

lipid bilayer: flexible double-layered sheet that makes up the cell membrane and forms a barrier between the cell and its surroundings (204)

bicapa lipídica: lámina flexible de dos capas que constituye la membrana celular y forma una barrera entre la célula y su entorno

logistic growth: growth pattern in which a population's growth slows and then stops following a period of exponential growth (135)

crecimiento logístico: patrón de crecimiento en el cual el desarrollo de una población se reduce y luego se detiene después de un período de crecimiento exponencial

loop of Henle: section of the nephron tubule that is responsible for conserving water and minimizing the volume of the filtrate (884)

asa de Henle: una sección del túbulo de nefrón responsable de conservar el agua y minimizar el volumen del material filtrado

lung: respiratory organ; place where gases are exchanged between the blood and inhaled air (788)

pulmón: órgano respiratorio; lugar donde se intercambian los gases entre la sangre y el aire inhalado

lymph: fluid that is filtered out of the blood (956)

linfa: fluido procedente de la sangre

lysogenic infection: type of infection in which a virus embeds its DNA into the DNA of the host cell and is replicated along with the host cell's DNA (577)

infección lisogénica: tipo de infección en la cual un virus inserta su ADN en el ADN de la célula huésped y se replica junto con el ADN de dicha célula huésped

lysosome: cell organelle that breaks down lipids, carbohydrates, and proteins into small molecules that can be used by the rest of the cell (198)

lisosoma: orgánulo celular que descompone los lípidos, los hidratos de carbono y las proteínas en moléculas pequeñas que pueden ser utilizadas por el resto de la célula

lytic infection: type of infection in which a virus enters a cell, makes copies of itself, and causes the cell to burst (576)

infección lítica: tipo de infección en la cual un virus penetra una célula, hace copias de sí mismo y provoca la ruptura o muerte celular

M

macroevolutionary patterns: changes in anatomy, phylogeny, ecology, and behavior that take place in clades larger than a single species (546)

patrones de macroevolución: cambios que ocurren en la anatomía, filogenia, ecología y comportamiento de clados que abarcan a más de una especie

Malpighian tubule: structure in most terrestrial arthropods that concentrates the uric acid and adds it to digestive wastes (797)

túbulo de Malpighi: estructura de la mayoría de los artrópodos terrestres que concentra el ácido úrico y lo incorpora a los residuos digestivos

mammary gland: gland in female mammals that produces milk to nourish the young (825)

glándula mamaria: glándula de las hembras de los mamíferos que produce leche para alimentar a las crías

mass extinction: event during which many species become extinct during a relatively short period of time (548)

extinción masiva: suceso durante el cual se extinguen muchas especies durante un período de tiempo relativamente corto

matrix: innermost compartment of the mitochondrion (256)

matriz: compartimento más interno de la mitocondria

mechanical digestion: physical breakdown of large pieces of food into smaller pieces (875)

digestión mecánica: descomposición física de grandes pedazos de comida en pedazos más pequeños

meiosis: process in which the number of chromosomes per cell is cut in half through the separation of homologous chromosomes in a diploid cell (324)

meiosis: proceso por el cual el número de cromosomas por célula se reduce a la mitad mediante la separación de los cromosomas homólogos de una célula diploide

melanin: dark brown pigment in the skin that helps protect the skin by absorbing ultraviolet rays (936)

melanina: pigmento marrón oscuro de la piel que contribuye a protegerla al absorber los rayos ultravioletas

melanocyte: cell in the skin that produces a dark brown pigment called melanin (936)

melanocito: célula de la piel que produce un pigmento marrón oscuro llamado melanina

menstrual cycle: regular sequence of events in which an egg develops and is released from the body (991)

ciclo menstrual: secuencia regular de sucesos en la cual un huevo se desarrolla y se elimina del cuerpo

menstruation: discharge of blood and the unfertilized egg from the body (993)

menstruación: descarga de sangre y del huevo no fertilizado del cuerpo

meristem: regions of unspecialized cells responsible for continuing growth throughout a plant's lifetime (667)

meristemas: regiones de células no especializadas responsables del crecimiento continuo de una planta durante su vida

mesoderm: middle germ layer; develops into muscles, and much of the circulatory, reproductive, and excretory systems (738)

mesodermo: capa embrionaria media; se desarrolla para dar lugar a los músculos y gran parte de los sistemas circulatorio, reproductor y excretor

mesophyll: specialized ground tissue found in leaves; performs most of a plant's photosynthesis (680)

mesófilo: tejido fundamental especializado que se halla en las hojas; realiza la mayor parte de la fotosíntesis de una planta

messenger RNA (mRNA): type of RNA that carries copies of instructions for the assembly of amino acids into proteins from DNA to the rest of the cell (363)

ARN mensajero: tipo de ARN que transporta copias de las instrucciones para el ensamblaje de los aminoácidos en proteínas, desde el ADN al resto de la célula

metabolism: the combination of chemical reactions through which an organism builds up or breaks down materials (19)

metabolismo: la combinación de reacciones químicas a través de las cuales un organismo acumula o desintegra materiales

metamorphosis: process of changes in shape and form of a larva into an adult (823)

metamorfosis: proceso de cambios en la estructura y forma de una larva hasta que se convierte en adulto

metaphase: phase of mitosis in which the chromosomes line up across the center of the cell (282)

metafase: fase de la mitosis en la cual los cromosomas se alinean a través del centro de la célula

microclimate: environmental conditions within a small area that differs significantly from the climate of the surrounding area (96)

microclima: condiciones medioambientales de un área pequeña que difieren significativamente del clima del área circundante

migration: seasonal behavior resulting in the movement from one environment to another (847)

migración: comportamiento estacional que da por resultado el desplazamiento desde un medio ambiente a otro

mineral: inorganic nutrient the body needs, usually in small amounts (872)

mineral: nutriente inorgánico que el cuerpo necesita, usualmente en pequeñas cantidades

mitochondrion: cell organelle that converts the chemical energy stored in food into compounds that are more convenient for the cell to use (202)

mitocondria: orgánulo celular que convierte la energía química almacenada en los alimentos en compuestos más apropiados para que la célula los use

mitosis: part of eukaryotic cell division during which the cell nucleus divides (282)

mitosis: fase de la división de las células eucariotas durante la cual se divide el núcleo celular

mixture: material composed of two or more elements or compounds that are physically mixed together but not chemically combined (42)

mezcla: material compuesto por dos o más elementos o compuestos que están mezclados físicamente pero no están combinados químicamente

molecular clock: method used by researchers that uses mutation rates in DNA to estimate the length of time that two species have been evolving independently (498)

reloj molecular: método de investigación que emplea las tasas de mutación del ADN para estimar el lapso de tiempo en que dos especies han evolucionado independientemente

molecule: smallest unit of most compounds that displays all the properties of that compound (37)

molécula: la unidad más pequeña de la mayoría de los compuestos que exhibe todas las propiedades de ese compuesto

molting: process of shedding an exoskeleton and growing a new one (815)

muda: proceso de desprendimiento de un exoesqueleto y el crecimiento de uno nuevo

monocot: angiosperm with one seed leaf in its ovary (652)

monocotiledónea: angiosperma con un cotiledón (hoja embrionaria) en su ovario

Glossary (continued)

monoculture: farming strategy of planting a single, highly productive crop year after year (155)

monocultivo: estrategia agrícola que consiste en plantar año tras año un único cultivo altamente productivo

monomer: small chemical unit that makes up a polymer (46)

monómero: pequeña unidad química que forma un polímero

monophyletic group: group that consists of a single ancestral species and all its descendants and excludes any organisms that are not descended from that common ancestor (516)

grupo monofilético: grupo que consiste en una especie con un único ancestro y todos sus descendientes y excluye a todos los organismos que no descienden de ese ancestro común

monosaccharide: simple sugar molecule (46)

monosacárido: molécula de azúcar simple

motor neuron: type of nerve cell that carries directions from interneurons to either muscle cells or glands (809)

neurona motora: tipo de célula nerviosa que lleva las instrucciones provenientes de las interneuronas a las células musculares o las glándulas

multiple alleles: a gene that has more than two alleles (320)

alelos múltiples: un gen que tiene más de dos alelos

multipotent: cell with limited potential to develop into many types of differentiated cells (295)

multipotentes: células con potencial limitado para generar muchos tipos de células diferenciadas

muscle fiber: long slender skeletal muscle cells (929)

fibra muscular: células largas y delgadas de los músculos esqueléticos

muscle tissue: type of tissue that makes movements of the body possible (863)

tejido muscular: tipo de tejido que hace posibles los movimientos del cuerpo

mutagen: chemical or physical agents in the environment that interact with DNA and may cause a mutation (375)

mutágeno: agentes físicos o químicos del medioambiente que interaccionan con el ADN y pueden causar una mutación

mutation: change in the genetic material of a cell (372)

mutación: cambio en el material genético de una célula

mutualism: symbiotic relationship in which both species benefit from the relationship (103)

mutualismo: relación simbiótica en la cual ambas especies se benefician

mycelium (pl. mycelia): densely branched network of the hyphae of a fungus (619)

micelio: la red de filamentos muy ramificados de las hifas de un hongo

mycorrhiza (pl. mycorrhizae): symbiotic association of plant roots and fungi (624)

micorriza: asociación simbiótica entre las raíces de las plantas y los hongos

myelin sheath: insulating membrane surrounding the axon in some neurons (897)

vaina de mielina: membrana aislante que rodea al axón de algunas neuronas

myocardium: thick middle muscle layer of the heart (949)

miocardio: capa media, gruesa y musculosa del corazón

myofibril: tightly packed filament bundles found within skeletal muscle fibers (930)

miofibrilla: manojos de filamentos muy apretados que se hallan dentro de las fibras de los músculos esqueléticos

myosin: thick filament of protein found in skeletal muscle cells (930)

miosina: filamento grueso de proteína que se halla en las células de los músculos esqueléticos

N

NAD⁺ (nicotinamide adenine dinucleotide): electron carrier involved in glycolysis (255)

NAD⁺ (dinucleótido de nicotinamida adenina): transportador de electrones que participa en la glucólisis

NADP⁺ (nicotinamide adenine dinucleotide phosphate): carrier molecule that transfers high-energy electrons from chlorophyll to other molecules (232)

NADP⁺ (fosfato de dinucleótido de nicotinamida adenina): molécula transportadora de electrones que transfiere electrones de alta energía desde la clorofila a otras moléculas

natural selection: process by which organisms that are most suited to their environment survive and reproduce most successfully; also called survival of the fittest (463)

selección natural: proceso por el cual los organismos más adaptados a su medioambiente sobreviven y se reproducen más exitosamente; también llamada supervivencia del más apto

nephridium (pl. nephridia): excretory structure of an annelid that filters body fluid (797)

nefridio: estructura excretora de los anélidos que filtra el fluido corporal

nephron: blood-filtering structure in the kidneys in which impurities are filtered out, wastes are collected, and purified blood is returned to the circulation (884)

nefrón: estructura filtradora de la sangre en los riñones, en la cual se filtran las impurezas, se recogen los desechos y la sangre purificada se devuelve a la circulación

nervous tissue: type of tissue that transmits nerve impulses throughout the body (863)

tejido nervioso: tipo de tejido que transmite los impulsos nerviosos por el cuerpo

neuromuscular junction: the point of contact between a motor neuron and a skeletal muscle cell (931)

unión neuromuscular: el punto de contacto entre una neurona motora y una célula de un músculo esquelético

neuron: nerve cell; specialized for carrying messages throughout the nervous system (808)

neurona: célula nerviosa; especializada en conducir mensajes a través del sistema nervioso

neurotransmitter: chemical used by a neuron to transmit an impulse across a synapse to another cell (900)

neurotransmisor: sustancia química utilizada por una neurona para transmitir un impulso a otra célula a través de una sinapsis

neurulation: the first step in the development of the nervous system (997)

neurulación: primer paso en el desarrollo del sistema nervioso

niche: full range of physical and biological conditions in which an organism lives and the way in which the organism uses those conditions (100)

nicho: toda la variedad de condiciones biológicas y físicas en las que vive un organismo y la manera en la que dicho organismo utiliza esas condiciones

nitrogen fixation: process of converting nitrogen gas into nitrogen compounds that plants can absorb and use (84)

fijación de nitrógeno: el proceso por el cual el gas nitrógeno se convierte en los compuestos nitrogenados que las plantas pueden absorber y utilizar

node: part on a growing stem where a leaf is attached (675)

nudo: parte de un tallo en crecimiento donde está adherida una hoja

nondisjunction: error in meiosis in which the homologous chromosomes fail to separate properly (401)

no disyunción: error que ocurre durante la meiosis, en el que cromosomas homólogos no logran separarse adecuadamente

nonrenewable resource: resource that cannot be replenished by a natural process within a reasonable amount of time (157)

recurso no renovable: recurso que no se puede reponer mediante un proceso natural dentro de un período de tiempo razonable

norepinephrine: hormone released by the adrenal glands that increases heart rate and blood pressure and prepares the body for intense physical activity (983)

norepinefrina o noradrenalina: hormona liberada por las glándulas adrenales que aumenta la frecuencia cardíaca y la presión sanguínea y prepara al cuerpo para realizar actividad física intensa

notochord: long supporting rod that runs through a chordate's body just below the nerve cord (731)

notocordio: extenso bastón de apoyo que se extiende a lo largo del cuerpo de los cordados, justo por debajo del cordón nervioso

nucleic acid: macromolecules containing hydrogen, oxygen, nitrogen, carbon, and phosphorus (48)

ácido nucleico: macromoléculas que contienen hidrógeno, oxígeno, nitrógeno, carbono y fósforo

nucleotide: subunit of which nucleic acids are composed; made up of a 5-carbon sugar, a phosphate group, and a nitrogenous base (48)

nucleótido: subunidad que constituye los ácidos nucleicos; compuesta de un azúcar de 5 carbonos, un grupo fosfato y una base nitrogenada

nucleus: the center of an atom, which contains the protons and neutrons (34); in cells, structure that contains the cell's genetic material in the form of DNA (193)

núcleo: el centro de un átomo, contiene los protones y los neutrones; en las células, la estructura que contiene el material genético de la célula en forma de ADN

nutrient: chemical substance that an organism needs to sustain life (82)

nutriente: sustancia química que un organismo necesita para continuar con vida

nymph: immature form of an animal that resembles the adult form but lacks functional sexual organs (823)

ninfa: forma inmadura de un animal que se parece a la forma adulta, pero carece de órganos sexuales funcionales



observation: process of noticing and describing events or processes in a careful, orderly way (6)

observación: el método de percibir y describir sucesos o procesos de manera atenta y ordenada

omnivore: organism that obtains energy by eating both plants and animals (71)

omnívoro: organismo que obtiene energía alimentándose de plantas y animales

open circulatory system: type of circulatory system in which blood is only partially contained within a system of blood vessels as it travels through the body (791)

sistema circulatorio abierto: tipo de sistema circulatorio en el cual la sangre, cuando fluye por el cuerpo, está solo parcialmente contenida dentro de un sistema de vasos sanguíneos

operant conditioning: type of learning in which an animal learns to behave in a certain way through repeated practice, to receive a reward or avoid punishment (843)

condicionamiento operante: tipo de aprendizaje en el cual un animal aprende a comportarse de cierta manera mediante una práctica repetida, para recibir una recompensa o evitar un castigo

Glossary (continued)

operator: short DNA region, adjacent to the promoter of a prokaryotic operon, that binds repressor proteins responsible for controlling the rate of transcription of the operon (378)

operador: pequeña región de ADN, adyacente al promotor del operón de una procariota, que une las proteínas represoras responsables de controlar la tasa de transcripción del operón

operon: in prokaryotes, a group of adjacent genes that share a common operator and promoter and are transcribed into a single mRNA (377)

operón: en las procariotas, grupo de genes adyacentes que comparten un operador y un promotor en común y que son transcritas a un solo ARN mensajero

opposable thumb: thumb that enables grasping objects and using tools (767)

pulgar oponible o prensible: un pulgar que permite aferrar objetos y utilizar herramientas

order: in classification, a group of closely related families (513)

orden: en la clasificación, un grupo de familias relacionadas estrechamente

organ: group of tissues that work together to perform closely related functions (216)

órgano: grupo de tejidos que trabajan juntos para realizar funciones estrechamente relacionadas

organ system: group of organs that work together to perform a specific function (216)

sistema de órganos: grupo de órganos que trabajan juntos para realizar una función específica

organelle: specialized structure that performs important cellular functions within a eukaryotic cell (196)

órgánulo: estructura especializada que realiza funciones celulares importantes dentro de una célula eucariota

osmosis: diffusion of water through a selectively permeable membrane (210)

ósmosis: la difusión de agua a través de una membrana de permeabilidad selectiva

osmotic pressure: pressure that must be applied to prevent osmotic movement across a selectively permeable membrane (211)

presión osmótica: la presión que debe aplicarse para evitar el movimiento osmótico a través de una membrana de permeabilidad selectiva

ossification: process of bone formation during which cartilage is replaced by bone (925)

osificación: el proceso de formación de hueso durante el cual el cartílago es reemplazado por hueso

osteoblast: bone cell that secretes mineral deposits that replace the cartilage in developing bones (925)

osteoblasto: célula ósea que secreta depósitos minerales que reemplazan al cartílago de los huesos en desarrollo

osteoclast: bone cell that breaks down bone minerals (925)

osteoclasto: célula ósea que degrada los minerales óseos

osteocyte: bone cell that helps maintain the minerals in bone tissue and continue to strengthen the growing bone (925)

osteocito: célula ósea que ayuda a conservar los minerales en el tejido óseo y continúa fortaleciendo al hueso en crecimiento

ovary: in plants, the structure that surrounds and protects seeds (650); in animals, the primary female reproductive organ; produces eggs (991)

ovario: en las plantas, la estructura que rodea a las semillas y las protege; órgano reproductor femenino fundamental en los animales; produce huevos

oviparous: species in which embryos develop in eggs outside a parent's body (822)

ovíparo: especie animal en la cual los embriones se desarrollan en huevos fuera del cuerpo del progenitor

ovoviparous: species in which the embryos develop within the mother's body but depend entirely on the yolk sac of their eggs (822)

ovovíparo: especie animal en la cual los embriones se desarrollan dentro del cuerpo de la madre, pero dependen completamente del saco vitelino de sus huevos

ovulation: the release of a mature egg from the ovary into one of the Fallopian tubes (993)

ovulación: liberación de un huevo maduro desde el ovario a una de las trompas de Falopio

ovule: structure in seed cones in which the female gametophytes develop (648)

óvulo: estructura de las semillas coníferas donde se desarrollan los gametos femeninos

ozone layer: atmospheric layer in which ozone gas is relatively concentrated; protects life on Earth from harmful ultraviolet rays in sunlight (175)

capa de ozono: capa atmosférica en la cual el gas ozono se encuentra relativamente concentrado; protege a los seres vivos de la Tierra de los perjudiciales rayos ultravioletas de la luz solar

P

pacemaker: small group of cardiac muscle fibers that maintains the heart's pumping rhythm by setting the rate at which the heart contracts; the sinoatrial (SA) node (951)

marcapasos: grupo pequeño de fibras musculares cardíacas que mantiene el ritmo de bombeo del corazón estableciendo la frecuencia a la que se contrae el corazón; el nodo sinusal

paleontologist: scientist who studies fossils (539)

paleontólogo: científico que estudia los fósiles

palisade mesophyll: layer of cells under the upper epidermis of a leaf (681)

mesófilo en empalizada: capa de células situada bajo la epidermis superior de una hoja

parasitism: symbiotic relationship in which one organism lives on or inside another organism and harms it (104)

parasitismo: relación simbiótica en la cual un organismo vive sobre otro organismo o en su interior y lo perjudica

parathyroid hormone (PTH): hormone produced by parathyroid gland that increases calcium levels in the blood (985)

hormona de la paratiroides: hormona producida por la glándula paratiroides que aumenta los niveles de calcio en la sangre

parenchyma: main type of ground tissue in plants that contains cells with thin cell walls and large central vacuoles (667)

parénquima: tipo principal de tejido fundamental de las plantas que contiene células con paredes celulares delgadas y vacuolas centrales grandes

passive immunity: temporary immunity that develops as a result of natural or deliberate exposure to an antibody (1020)

inmunidad pasiva: inmunidad transitoria que se desarrolla a consecuencia de una exposición natural o deliberada a un anticuerpo

pathogen: disease-causing agent (586)

patógeno: agente que causa una enfermedad

pedigree: chart that shows the presence or absence of a trait according to the relationships within a family across several generations (396)

árbol genealógico: diagrama que muestra la presencia o ausencia de un rasgo de acuerdo con las relaciones intra-familiares a través de varias generaciones

pepsin: enzyme that breaks down proteins into smaller polypeptide fragments (877)

pepsina: enzima que descompone las proteínas en fragmentos de polipéptidos más pequeños

period: division of geologic time into which eras are subdivided (543)

período: división del tiempo geológico en la que se subdividen las eras

peripheral nervous system: network of nerves and supporting cells that carries signals into and out of the central nervous system (896)

sistema nervioso periférico: red de nervios y células de apoyo que transporta señales hacia y desde el sistema nervioso central

peristalsis: contractions of smooth muscles that provide the force that moves food through the esophagus toward the stomach (877)

peristalsis: contracciones de los músculos lisos que proporcionan la fuerza que hace avanzar los alimentos a través del esófago hacia el estómago

permafrost: layer of permanently frozen subsoil found in the tundra (115)

permacongelamiento: capa de subsuelo congelado en forma permanente que se halla en la tundra

petiole: thin stalk that connects the blade of a leaf to a stem (680)

pecíolo: pedúnculo delgado que une la lámina de una hoja con un tallo

pH scale: scale with values from 0 to 14, used to measure the concentration of H^+ ions in a solution; a pH of 0 to 7 is acidic, a pH of 7 is neutral, and a pH of 7 to 14 is basic (43)

escala del pH: escala con valores de 0 a 14, utilizada para medir la concentración de iones H^+ en una solución; un pH de 0 a 7 es ácido, un pH de 7 es neutro y un pH de 7 a 14 es básico

pharyngeal pouch: one of a pair of structures in the throat region of a chordate (731)

bolsa faríngea: cada una de las dos estructuras situadas en la región de la garganta de los cordados

pharynx: tube at the back of the mouth that serves as a passageway for both air and food; also called the throat (964)

faringe: tubo situado a continuación de la boca que sirve de conducto para que pasen el aire y los alimentos; también llamada garganta

phenotype: physical characteristics of an organism (315)

fenotipo: características físicas de un organismo

phloem: vascular tissue that transports solutions of nutrients and carbohydrates produced by photosynthesis through the plant (643)

floema: tejido vascular que transporta por toda la planta las soluciones de nutrientes e hidratos de carbono producidos en la fotosíntesis

photic zone: sunlight region near the surface of water (117)

zona fótica: región cerca de la superficie del mar en la que penetra la luz solar

photoperiod: a plant response to the relative lengths of light and darkness (713)

fotoperíodo: la respuesta de una planta a los tiempos relativos de luz y oscuridad

photosynthesis: process used by plants and other autotrophs to capture light energy and use it to power chemical reactions that convert carbon dioxide and water into oxygen and energy-rich carbohydrates such as sugars and starches (70, 228)

fotosíntesis: proceso empleado por las plantas y otros organismos autótrofos para atrapar la energía luminosa y utilizarla para impulsar reacciones químicas que convierten el dióxido de carbono y el agua en oxígeno e hidratos de carbono de gran contenido energético, como azúcares y almidones

photosystem: cluster of chlorophyll and proteins found in thylakoids (235)

fotosistema: conjunto de clorofila y proteínas que se hallan en los tilacoides

phototropism: tendency of a plant to grow toward a light source (712)

fototropismo: la tendencia de una planta a crecer hacia una fuente de luz

Glossary (continued)

phylogeny: study of evolutionary relationships among organisms (516)

filogenia: estudio de las relaciones evolutivas entre los organismos

phylum (pl. phyla): in classification, a group of closely related classes (514)

filo: en la clasificación, un grupo de clases estrechamente relacionadas

phytoplankton: photosynthetic algae found near the surface of the ocean (73)

fitoplancton: algas fotosintéticas que se hallan cerca de la superficie del océano

pigment: light-absorbing molecule used by plants to gather the sun's energy (230)

pigmento: moléculas que absorben la luz, empleadas por las plantas para recolectar la energía solar

pioneer species: first species to populate an area during succession (107)

especies pioneras: las primeras especies en poblar un área durante la sucesión ecológica

pistil: single carpel or several fused carpels; contains the ovary, style, and stigma (697)

pistilo: un único carpelo o varios carpelos unidos; contiene el ovario, el estilo y el estigma

pith: parenchyma cells inside the ring of vascular tissue in dicot stems (675)

médula: en los tallos de las dicotiledóneas, las células parenquimatosas ubicadas en el interior del anillo de tejido vascular

pituitary gland: small gland found near the base of the skull that secretes hormones that directly regulate many body functions and controls the actions of several other endocrine glands (982)

glándula pituitaria: pequeña glándula situada cerca de la base del cráneo que secreta hormonas que regulan directamente muchas funciones corporales y controla las acciones de varias otras glándulas endocrinas

placenta: specialized organ in placental mammals through which respiratory gases, nutrients, and wastes are exchanged between the mother and her developing young (822, 998)

placenta: órgano especializado de los mamíferos placentarios a través del cual se intercambian los gases respiratorios, los nutrientes y los residuos entre la madre y su cría en desarrollo

plankton: microscopic organisms that live in aquatic environments; includes both phytoplankton and zooplankton (119)

plancton: organismos microscópicos que viven en medios ambientes acuáticos; incluye el fitoplancton y el zooplancton

plasma: straw-colored liquid portion of the blood (954)

plasma: parte líquida de la sangre de color amarillento

plasmid: small, circular piece of DNA located in the cytoplasm of many bacteria (424)

plásmido: pequeña porción circular de ADN ubicada en el citoplasma de muchas bacterias

plasmodium: amoeboid feeding stage in the life cycle of a plasmodial slime mold (613)

plasmodio: etapa de alimentación ameboide del ciclo vital de los mohos mucilaginosos

plate tectonics: geologic processes, such as continental drift, volcanoes, and earthquakes, resulting from plate movement (544)

tectónica de placas: procesos geológicos, como la deriva continental, los volcanes y los terremotos, que son consecuencia de los movimientos de las placas

platelet: cell fragment released by bone marrow that helps in blood clotting (955)

plaqueta: fragmento celular liberado por la médula espinal que interviene en la coagulación de la sangre

pluripotent: cells that are capable of developing into most, but not all, of the body's cell types (294)

pluripotentes: células capaces de convertirse en la mayoría de células del cuerpo, pero no en todas

point mutation: gene mutation in which a single base pair in DNA has been changed (373)

mutación puntual: mutación genética en la cual se ha modificado un único par de bases en el ADN

pollen grain: structure that contains the entire male gametophyte in seed plants (647)

grano de polen: la estructura que contiene a todo el gametofito masculino en las plantas fanerógamas

pollen tube: structure in a plant that contains two haploid sperm nuclei (648)

tubo polínico: en una planta, estructura que contiene dos núcleos espermáticos haploides

pollination: transfer of pollen from the male reproductive structure to the female reproductive structure (647)

polinización: transferencia de polen desde la estructura reproductora masculina hacia la estructura reproductora femenina

pollutant: harmful material that can enter the biosphere through the land, air, or water (160)

contaminante: material nocivo que puede ingresar en la biósfera a través de la tierra, el aire o el agua

polygenic trait: trait controlled by two or more genes (320, 486)

rasgo poligénico: rasgo controlado por dos o más genes

polymer: molecules composed of many monomers; makes up macromolecules (46)

polímero: molécula compuesta por muchos monómeros; forma macromoléculas

polymerase chain reaction (PCR): the technique used by biologists to make many copies of a particular gene (423)

reacción en cadena de la polímerasa (PCR): técnica usada por los biólogos para hacer muchas copias de un gen específico

polypeptide: long chain of amino acids that makes proteins (366)

polipéptido: cadena larga de aminoácidos que constituye las proteínas

polyploidy: condition in which an organism has extra sets of chromosomes (376)

poliploidía: condición en la cual un organismo tiene grupos adicionales de cromosomas

population: group of individuals of the same species that live in the same area (64)

población: grupo de individuos de la misma especie que viven en la misma área

population density: number of individuals per unit area (131)

densidad de población: número de individuos que viven por unidad de superficie

predation: interaction in which one organism (the predator) captures and feeds on another organism (the prey) (102)

depredación: interacción en la cual un organismo (el predador) captura y come a otro organismo (la presa)

prehensile tail: long tail that can coil tightly enough around a branch (767)

cola prensil: cola larga que puede enrollarse apretadamente alrededor de una rama

pressure-flow hypothesis: hypothesis that explains the method by which phloem sap is transported through the plant from a sugar “source” to a sugar “sink” (687)

teoría de flujo por presión: teoría que explica el método por el cual la savia del floema recorre la planta desde una “fuente” de azúcar hacia un “vertedero” de azúcar

primary growth: pattern of growth that takes place at the tips and shoots of a plant (676)

crecimiento primario: patrón de crecimiento que tiene lugar en las puntas y en los brotes de una planta

primary producer: first producer of energy-rich compounds that are later used by other organisms (69)

productor primario: los primeros productores de compuestos ricos en energía que luego son utilizados por otros organismos

primary succession: succession that occurs in an area in which no trace of a previous community is present (106)

sucesión primaria: sucesión que ocurre en un área en la cual no hay rastros de la presencia de una comunidad anterior

principle of dominance: Mendel’s second conclusion, which states that some alleles are dominant and others are recessive (310)

principio de dominancia: segunda conclusión de Mendel, que establece que algunos alelos son dominantes y otros son recesivos

prion: protein particles that cause disease (592)

prión: partículas de proteína que causan enfermedades

probability: likelihood that a particular event will occur (313)

probabilidad: la posibilidad de que ocurra un suceso dado

product: elements or compounds produced by a chemical reaction (50)

producto: elemento o compuesto producido por una reacción química

prokaryote: unicellular organism that lacks a nucleus (193, 580)

procariota: organismo unicelular que carece de núcleo

promoter: specific region of a gene where RNA polymerase can bind and begin transcription (365)

promotor: región específica de un gen en donde la ARN polimerasa puede unirse e iniciar la transcripción

prophage: bacteriophage DNA that is embedded in the bacterial host’s DNA (577)

profago: ADN del bacteriófago que está alojado en el interior del ADN del huésped bacteriano

prophase: first and longest phase of mitosis in which the genetic material inside the nucleus condenses and the chromosomes become visible (282)

profase: primera y más prolongada fase de la mitosis, en la cual el material genético dentro del interior del núcleo se condensa y los cromosomas se hacen visibles

prostaglandin: modified fatty acids that are produced by a wide range of cells; generally affect only nearby cells and tissues (980)

prostaglandina: ácidos grasos modificados que son producidos por una amplia gama de células; generalmente afectan solo a las células y tejidos cercanos

protein: macromolecule that contains carbon, hydrogen, oxygen, and nitrogen; needed by the body for growth and repair (48, 870)

proteína: macromolécula que contiene carbono, hidrógeno, oxígeno y nitrógeno; necesaria para el crecimiento y reparación del cuerpo

protostome: an animal whose mouth is formed from the blastopore (739)

protóstomo: animal cuya boca se desarrolla a partir del blastoporo

pseudocoelom: body cavity that is only partially lined with mesoderm (738)

pseudoceloma o falso celoma: cavidad corporal que está revestida sólo parcialmente con mesodermo

Glossary (continued)

pseudopod: temporary cytoplasmic projection used by some protists for movement (606)

seudópodo: prolongación citoplasmática transitoria utilizada por algunos protistas para moverse

puberty: period of rapid growth and sexual maturation during which the reproductive system becomes fully functional (988)

pubertad: período de crecimiento rápido y de maduración sexual durante el cual el sistema reproductor se vuelve completamente funcional

pulmonary circulation: path of circulation between the heart and lungs (950)

circulación pulmonar: recorrido de la circulación entre el corazón y los pulmones

punctuated equilibrium: pattern of evolution in which long stable periods are interrupted by brief periods of more rapid change (549)

equilibrio interrumpido: patrón de evolución en el cual los largos períodos de estabilidad se ven interrumpidos por breves períodos de cambio más rápido

Punnett square: diagram that can be used to predict the genotype and phenotype combinations of a genetic cross (315)

cuadro de Punnett: un diagrama que puede utilizarse para predecir las combinaciones de genotipos y fenotipos en un cruce genético

pupa: stage in complete metamorphosis in which the larva develops into an adult (823)

pupa: etapa de la metamorfosis completa en la cual la larva se convierte en un adulto

pupil: small opening in the iris that admits light into the eye (912)

pupila: pequeña abertura en el iris que deja pasar la luz al ojo

Q, R

radial symmetry: body plan in which any number of imaginary planes drawn through the center of the body could divide it into equal halves (738)

simetría radial: diseño corporal en el cual cualquier número de ejes imaginarios dibujados a través del centro del cuerpo lo dividirá en mitades iguales

radiometric dating: method for determining the age of a sample from the amount of a radioactive isotope to the non-radioactive isotope of the same element in a sample (540)

datación radiométrica: método para determinar la edad de una muestra a partir de la cantidad de isótopo radioactivo en relación a la de isótopo no radiactivo del mismo elemento en dicha muestra

reabsorption: process by which water and dissolved substances are taken back into the blood (884)

reabsorción: proceso por el cual el agua y las sustancias disueltas regresan a la sangre

reactant: elements or compounds that enter into a chemical reaction (50)

reactante: elemento o compuesto que participa en una reacción química

receptor: on or in a cell, a specific protein to whose shape fits that of a specific molecular messenger, such as a hormone (217, 709)

receptor: proteína específica que puede encontrarse en la membrana celular o dentro de la célula, cuya forma se corresponde con la de un mensajero molecular específico, por ejemplo una hormona

recombinant DNA: DNA produced by combining DNA from different sources (424)

ADN recombinante: ADN producido por la combinación de ADN de orígenes diferentes

red blood cell: blood cell containing hemoglobin that carries oxygen (954)

glóbulo rojo: célula sanguínea que contiene hemoglobina y transporta oxígeno

reflex: quick, automatic response to a stimulus (901)

reflejo: respuesta rápida y automática a un estímulo

reflex arc: the sensory receptor, sensory neuron, motor neuron, and effector that are involved in a quick response to a stimulus (907)

arco reflejo: el receptor sensorial, la neurona sensorial, la neurona motora y el efector que participan en una respuesta rápida a un estímulo

relative dating: method of determining the age of a fossil by comparing its placement with that of fossils in other rock layers (540)

datación relativa: método para determinar la edad de un fósil comparando su ubicación con la de los fósiles hallados en otras capas de roca

releasing hormone: hormone produced by the hypothalamus that makes the anterior pituitary secrete hormones (983)

hormona liberadora: hormona producida por el hipotálamo que hace que la glándula pituitaria anterior secrete hormonas (983)

renewable resource: resource that can be produced or replaced by healthy ecosystem functions (157)

recurso renovable: recurso que se puede producir o reemplazar mediante el funcionamiento saludable del ecosistema

replication: process of copying DNA prior to cell division (350)

replicación: proceso de copia de ADN previo a la división celular

reproductive isolation: separation of a species or population so that they no longer interbreed and evolve into two separate species (494)

aislamiento reproductor: separación de una especie o de una población de tal manera que ya no pueden aparearse y evolucionan hasta formar dos especies separadas

resource: any necessity of life, such as water, nutrients, light, food, or space (100)

recurso: todo lo necesario para la vida, como agua, nutrientes, luz, alimento o espacio

response: specific reaction to a stimulus (809)

respuesta: reacción específica a un estímulo

resting potential: electrical charge across the cell membrane of a resting neuron (898)

potencial de reposo: carga eléctrica que pasa a través de la membrana celular de una neurona en reposo

restriction enzyme: enzyme that cuts DNA at a sequence of nucleotides (403)

enzima restrictiva: enzima que corta el ADN en una secuencia de nucleótidos

retina: innermost layer of the eye; contains photoreceptors (913)

retina: membrana más interna del ojo; contiene receptores susceptibles a la luz

retrovirus: RNA virus that contains RNA as its genetic information (578)

retrovirus: ARN viral cuya información genética está contenida en el ARN

ribonucleic acid (RNA): single-stranded nucleic acid that contains the sugar ribose (362)

ácido ribonucleico (ARN): hebra única de ácido nucleico que contiene el azúcar ribose

ribosomal RNA (rRNA): type of RNA that combines with proteins to form ribosomes (363)

ARN ribosomal: tipo de ARN que se combina con proteínas para formar los ribosomas

ribosome: cell organelle consisting of RNA and protein found throughout the cytoplasm in a cell; the site of protein synthesis (200)

ribosoma: orgánulo celular formado por ARN y proteína que se halla en el citoplasma de una célula; lugar donde se sintetizan las proteínas

RNA interference (RNAi): introduction of double-stranded RNA into a cell to inhibit gene expression (380)

ARN de interferencia: introducción de un ARN de doble hebra en una célula para inhibir la expresión de genes específicos

RNA polymerase: enzyme that links together the growing chain of RNA nucleotides during transcription using a DNA strand as a template (364)

ARN polimerasa: enzima que enlaza los nucleótidos de la cadena de ARN en crecimiento durante la transcripción, usando una secuencia de ADN como patrón o molde

rod: photoreceptor in the eyes that is sensitive to light but can't distinguish color (913)

bastoncillo: receptor ubicado en los ojos que es susceptible a la luz, pero que no puede distinguir el color

root cap: tough covering of the root tip that protects the meristem (670)

cofia: cubierta dura de la punta de las raíces que protege al meristemo

root hair: small hairs on a root that produce a large surface area through which water and minerals can enter (670)

pelo radicular: pelos pequeños sobre una raíz que producen una superficie extensa a través de la cual pueden penetrar el agua y los minerales

rumen: stomach chamber in cows and related animals in which symbiotic bacteria digest cellulose (786)

panza: cavidad del estómago de las vacas y otros rumiantes en la cual las bacterias simbióticas digieren la celulosa

S

sapwood: in a woody stem, the layer of secondary phloem that surrounds the heartwood; usually active in fluid transport (678)

albura: en un tallo leñoso, la capa de floema secundario que rodea al duramen; participa usualmente en el transporte de fluidos

sarcomere: unit of muscle contraction; composed of two z-lines and the filaments between them (930)

sarcómero: unidad de contracción muscular; compuesto por dos líneas "z" y los filamentos que hay entre ellas

scavenger: animal that consumes the carcasses of other animals (71)

carroñero: animal que consume los cadáveres de otros animales

science: organized way of gathering and analyzing evidence about the natural world (5)

ciencia: manera organizada de reunir y analizar la información sobre el mundo natural

sclerenchyma: type of ground tissue with extremely thick, rigid cell walls that make ground tissue tough and strong (667)

esclerénquima: tipo de tejido fundamental con células extremadamente rígidas y gruesas que lo hacen fuerte y resistente

scrotum: external sac that houses the testes (989)

escroto: bolsa externa que contiene a los testículos

sebaceous gland: gland in the skin that secretes sebum (oily secretion) (937)

glándula sebácea: glándula de la piel que secreta sebo (secreción oleosa)

Glossary (continued)

secondary growth: type of growth in dicots in which the stems increase in thickness (676)

crecimiento secundario: tipo de crecimiento de las dicotiledóneas en el cual los tallos aumentan su grosor

secondary succession: type of succession that occurs in an area that was only partially destroyed by disturbances (107)

sucesión secundaria: tipo de sucesión que ocurre en un área destruida sólo parcialmente por alteraciones

seed: plant embryo and a food supply encased in a protective covering (646)

semilla: embrión vegetal y fuente de alimento encerrada en una cubierta protectora

seed coat: tough covering that surrounds and protects the plant embryo and keeps the contents of the seed from drying out (647)

envoltura de la semilla: cubierta dura que rodea y protege al embrión de la planta y evita que el contenido de la semilla se seque

segregation: separation of alleles during gamete formation (312)

segregación: separación de los alelos durante la formación de gametos

selective breeding: method of breeding that allows only those organisms with desired characteristics to produce the next generation (418)

reproducción selectiva o selección artificial: método de reproducción que sólo permite la producción de una nueva generación a aquellos organismos con características deseadas

selectively permeable: property of biological membranes that allows some substances to pass across it while others cannot; also called semipermeable membrane (205)

permeabilidad selectiva: propiedad de las membranas biológicas que permite que algunas sustancias pasen a través de ellas mientras que otras no pueden hacerlo; también llamada membrana semipermeable

semen: the combination of sperm and seminal fluid (990)

semen: combinación de esperma y de fluido seminal

semicircular canal: one of three structures in the inner ear that monitor the position of the body in relation to gravity (911)

canal semicircular: una de las tres estructuras ubicadas en el oído interno que controlan la posición del cuerpo en relación con la fuerza de la gravedad

seminiferous tubule: one of hundreds of tubules in each testis in which sperm develop (989)

túbulo seminífero: uno de los cientos de túbulos situados en cada testículo, en los cuales se produce el esperma

sensory neuron: type of nerve cell that receives information from sensory receptors and conveys signals to central nervous system (808)

neurona sensorial: tipo de célula nerviosa que recibe información de los receptores sensoriales y transmite señales al sistema nervioso central

sex chromosome: one of two chromosomes that determines an individual's sex (393)

cromosoma sexual: uno de los pares de cromosomas que determina el sexo de un individuo

sex-linked gene: gene located on a sex chromosome (395)

gen ligado al sexo: gen situado en un cromosoma sexual

sexual reproduction: type of reproduction in which cells from two parents unite to form the first cell of a new organism (19, 277)

reproducción sexual: tipo de reproducción en la cual las células de dos progenitores se unen para formar la primera célula de un nuevo organismo

sexual selection: when individuals select mates based on heritable traits (492)

selección sexual: cuando un individuo elige a su pareja sexual atraído por sus rasgos heredables

sexually transmitted disease (STD): disease that is spread from person to person by sexual contact (994)

enfermedad de transmisión sexual (ETS): enfermedad que se transmite de una persona a otra por contacto sexual

sieve tube element: continuous tube through the plant phloem cells, which are arranged end to end (666)

tubo crivoso: tubo continuo que atraviesa las células del floema vegetal, que están puestas una junto a otra

single-gene trait: trait controlled by one gene that has two alleles (485)

rasgo de un único gen (monogénico): rasgo controlado por un gen que tiene dos alelos

small intestine: digestive organ in which most chemical digestion and absorption of food takes place (878)

intestino delgado: órgano digestivo en el cual tiene lugar la mayor parte de la digestión química y la absorción de los alimentos

smog: gray-brown haze formed by a mixture of chemicals (163)

esmog: neblina marrón grisácea formada por una mezcla de compuestos químicos

society: group of closely related animals of the same species that work together for the benefit of the group (848)

sociedad: grupo de animales de la misma especie, estrechamente relacionados, que trabajan juntos para el beneficio del grupo

solute: substance that is dissolved in a solution (42)

soluto: sustancia que está disuelta en una solución

solution: type of mixture in which all the components are evenly distributed (42)

solución: tipo de mezcla en la cual todos los compuestos están distribuidos de forma homogénea

solvent: dissolving substance in a solution (42)

disolvente: sustancia que disuelve una solución

somatic nervous system: part of the peripheral nervous system that carries signals to and from skeletal muscles (907)

sistema nervioso somático: parte del sistema nervioso periférico que conduce señales hacia y desde los músculos esqueléticos

speciation: formation of a new species (494)

especiación: formación de una nueva especie

species: a group of similar organisms that can breed and produce fertile offspring (64, 494)

especie: un grupo de organismos similares que pueden reproducirse y producir una descendencia fértil

species diversity: number of different species that make up a particular area (166)

diversidad de especies: número de especies diferentes que forman un área determinada

spirillum (pl. spirilla): spiral or corkscrew-shaped prokaryote (582)

espirilo: procariota con forma helicoidal o espiral

spongy mesophyll: layer of loose tissue found beneath the palisade mesophyll in a leaf (681)

mesófilo esponjoso: capa de tejido suelto situado debajo del mesófilo en empalizada de una hoja

sporangium (pl. sporangia): spore capsule in which haploid spores are produced by meiosis (609, 642)

esporangio: cápsula en la cual se producen las esporas haploides mediante meiosis

spore: in prokaryotes, protists, and fungi, any of a variety of thick-walled life cycle stages capable of surviving unfavorable conditions (607)

espora: en los procariotas, los protistas y los hongos, cada una de las células que, en un momento de su ciclo de vida, produce una membrana gruesa y resistente capaz de sobrevivir en condiciones desfavorables

sporophyte: spore-producing plant; the multicellular diploid phase of a plant life cycle (637)

esporofito: planta productora de esporas; la fase diploide multicelular del ciclo vital de una planta

stabilizing selection: form of natural selection in which individuals near the center of a distribution curve have higher fitness than individuals at either end of the curve (489)

selección estabilizadora: forma de selección natural en la cual los individuos situados cerca del centro de una curva de distribución tienen mayor aptitud que los individuos que se hallan en cualquiera de los extremos de la curva

stamen: male part of a flower; contains the anther and filament (697)

estambre: parte masculina de una flor; contiene la antera y el filamento

stem cell: unspecialized cell that can give rise to one or more types of specialized cells (295)

célula troncal: célula no especializada que puede originar uno o más tipos de células especializadas

stigma: sticky part at the top of style; specialized to capture pollen (697)

estigma: parte pegajosa situada en la parte superior del estilo; especializado en atrapar el polen

stimulus (pl. stimuli): signal to which an organism responds (18, 808)

estímulo: señal a la cual responde un organismo

stoma (pl. stomata): small opening in the epidermis of a plant that allows carbon dioxide, water, and oxygen to diffuse into and out of the leaf (681)

estoma: pequeña abertura en la epidermis de una planta que permite que el dióxido de carbono, el agua y el oxígeno entren y salgan de la hoja

stomach: large muscular sac that continues the mechanical and chemical digestion of food (877)

estómago: gran bolsa muscular que continúa la digestión mecánica y química de los alimentos

stroma: fluid portion of the chloroplast; outside of the thylakoids (231)

estroma: parte fluida del cloroplasto; en el exterior de los tilacoides

substrate: reactant of an enzyme-catalyzed reaction (52)

sustrato: reactante de una reacción catalizada por enzimas

suspension: mixture of water and nondissolved material (42)

suspensión: mezcla de agua y material no disuelto

sustainable development: strategy for using natural resources without depleting them and for providing human needs without causing long-term environmental harm (157)

desarrollo sostenible: estrategia para utilizar los recursos naturales sin agotarlos y para satisfacer las necesidades humanas sin causar daños ambientales a largo plazo

sympiosis: relationship in which two species live close together (103)

simbiosis: relación en la cual dos especies viven en estrecha asociación

synapse: point at which a neuron can transfer an impulse to another cell (900)

sinapsis: punto en el cual una neurona puede transferir un impulso a otra célula

systematics: study of the diversity of life and the evolutionary relationships between organisms (512)

sistemática: estudio de la diversidad de la vida y de las relaciones evolutivas entre los organismos

systemic circulation: path of circulation between the heart and the rest of the body (950)

circulación sistémica: recorrido de la circulación entre el corazón y el resto del cuerpo

Glossary (continued)

T

taiga: biome with long cold winters and a few months of warm weather; dominated by coniferous evergreens; also called boreal forest (114)

taiga: bioma con inviernos largos y fríos y pocos meses de tiempo cálido; dominado por coníferas de hojas perennes; también llamada bosque boreal

target cell: cell that has a receptor for a particular hormone (709, 978)

célula diana o célula blanco: célula que posee un receptor para una hormona determinada

taste bud: sense organs that detect taste (910)

papila gustativa: órgano sensorial que percibe los sabores

taxon (pl. taxa): group or level of organization into which organisms are classified (512)

taxón: grupo o nivel de organización en que se clasifican los organismos

telomere: repetitive DNA at the end of a eukaryotic chromosome (352)

telómero: ADN repetitivo situado en el extremo de un cromosoma eucariota

telophase: phase of mitosis in which the distinct individual chromosomes begin to spread out into a tangle of chromatin (283)

telofase: fase de la mitosis en la cual los distintos cromosomas individuales comienzan a separarse y a formar hebras de cromatina

temporal isolation: form of reproductive isolation in which two or more species reproduce at different times (495)

aislamiento temporal: forma de aislamiento reproductivo en la cual dos o más especies se reproducen en épocas diferentes

tendon: tough connective tissue that connects skeletal muscles to bones (816, 932)

tendón: tejido conectivo resistente que une los músculos esqueléticos a los huesos

territory: a specific area occupied and protected by an animal or group of animals (848)

territorio: área específica ocupada y protegida por un animal o un grupo de animales

testis (pl. testes): primary male reproductive organ; produces sperm (989)

testículo: órgano reproductor masculino fundamental; produce esperma

tetrad: structure containing four chromatids that forms during meiosis (324)

tétrada: estructura con cuatro cromátidas que se forma durante la meiosis

tetrapod: vertebrate with four limbs (760)

tetrápode: vertebrado con cuatro miembros

thalamus: brain structure that receives messages from the sense organs and relays the information to the proper region of the cerebrum for further processing (903)

tálamo: estructura cerebral que recibe mensajes de los órganos sensoriales y transmite la información a la región adecuada del cerebro para su procesamiento ulterior

theory: well-tested explanation that unifies a broad range of observations and hypotheses, and enables scientists to make accurate predictions about new situations (13)

teoría: explicación basada en pruebas que unifica una amplia gama de observaciones e hipótesis; permite que los científicos hagan predicciones exactas ante situaciones nuevas

thigmotropism: response of a plant to touch (712)

tigmotropismo: respuesta de una planta al tacto

threshold: minimum level of a stimulus that is required to cause an impulse (899)

umbral: nivel mínimo que debe tener un estímulo para causar un impulso

thylakoid: saclike photosynthetic membranes found in chloroplasts (231)

tilacoide: membranas fotosintéticas con forma de bolsa situadas en los cloroplastos

thyroxine: hormone produced by the thyroid gland, which increases the metabolic rate of cells throughout the body (985)

tiroxina: hormona producida por la glándula tiroides que aumenta el metabolismo de las células de todo el cuerpo

tissue: group of similar cells that perform a particular function (216)

tejido: grupo de células similares que realizan una función en particular

tolerance: ability of an organism to survive and reproduce under circumstances that differ from their optimal conditions (99)

tolerancia: capacidad de un organismo de sobrevivir y reproducirse en circunstancias que difieren de sus condiciones óptimas

totipotent: cells that are able to develop into any type of cell found in the body (including the cells that make up the extraembryonic membranes and placenta) (294)

totipotentes: células capaces de convertirse en cualquier tipo de célula del cuerpo (incluidas las células que forman las membranas situadas fuera del embrión y la placenta)

trachea: tube that connects the larynx to the bronchi; also called the windpipe (964)

tráquea: tubo que conecta a la laringe con los bronquios

tracheid: hollow plant cell in xylem with thick cell walls strengthened by lignin (643)

traqueida: célula vegetal ahuecada del xilema con paredes celulares gruesas, fortalecida por la lignina

tracheophyte: vascular plant (643)

traqueófito: planta vascular

trait: specific characteristic of an individual (309)

rasgo: característica específica de un individuo

transcription: synthesis of an RNA molecule from a DNA template (364)

transcripción: síntesis de una molécula de ARN a partir de una secuencia de ADN

transfer RNA (tRNA): type of RNA that carries each amino acid to a ribosome during protein synthesis (363)

ARN de transferencia: tipo de ARN que transporta a cada aminoácido hasta un ribosoma durante la síntesis de proteínas

transformation: process in which one strain of bacteria is changed by a gene or genes from another strain of bacteria (339)

transformación: proceso en el cual una cepa de bacterias es transformada por uno o más genes provenientes de otra cepa de bacterias

transgenic: term used to refer to an organism that contains genes from other organisms (426)

transgénico: término utilizado para referirse a un organismo que contiene genes provenientes de otros organismos

translation: process by which the sequence of bases of an mRNA is converted into the sequence of amino acids of a protein (368)

traducción (genética): proceso por el cual la secuencia de bases de un ARN mensajero se convierte en la secuencia de aminoácidos de una proteína

transpiration: loss of water from a plant through its leaves (681)

transpiración: pérdida del agua de una planta a través de sus hojas

trochophore: free-swimming larval stage of an aquatic mollusk (756)

trocófora: estado larvario de un molusco acuático durante el cual puede nadar libremente

trophic level: each step in a food chain or food web (77)

nivel trófico: cada paso en una cadena o red alimenticia

tropism: movement of a plant toward or away from stimuli (712)

tropismo: movimiento de una planta hacia los estímulos o en dirección opuesta a ellos

tumor: mass of rapidly dividing cells that can damage surrounding tissue (289)

tumor: masa de células que se dividen rápidamente y pueden dañar al tejido circundante

U

understory: layer in a rain forest found underneath the canopy formed by shorter trees and vines (112)

sotobosque: en un bosque tropical, la capa de vegetación que se halla bajo el dosel forestal, formada por árboles más bajos y enredaderas

ureter: tube that carries urine from a kidney to the urinary bladder (883)

uréter: conducto que transporta la orina del riñón a la vejiga urinaria

urethra: tube through which urine leaves the body (883)

uretra: conducto por donde la orina sale del cuerpo

urinary bladder: saclike organ in which urine is stored before being excreted (883)

vejiga urinaria: órgano en forma de bolsa en el cual se almacena la orina antes de ser excretada

V

vaccination: injection of a weakened, or a similar but less dangerous, pathogen to produce immunity (1020)

vacunación: inyección de un patógeno debilitado o similar al original, pero menos peligroso, para producir inmunidad

vaccine: preparation of weakened or killed pathogens used to produce immunity to a disease (588)

vacuna: preparación hecha con organismos patógenos debilitados o muertos que se utiliza para producir inmunidad a una enfermedad

vacuole: cell organelle that stores materials such as water, salts, proteins, and carbohydrates (198)

vacuola: orgánulo celular que almacena sustancias como agua, sales, proteínas e hidratos de carbono

valve: flap of connective tissue located between an atrium and a ventricle, or in a vein, that prevents backflow of blood (950)

válvula: pliegue de tejido conectivo ubicado entre una aurícula y un ventrículo, o en una vena, que impide el retroceso de la sangre

van der Waals force: slight attraction that develops between oppositely charged regions of nearby molecules (38)

fuerzas de van der Waals: atracción leve que se desarrolla entre las regiones con cargas opuestas de moléculas cercanas

vas deferens: tube that carries sperm from the epididymis to the urethra (989)

conducto deferente: tubo que transporta el esperma desde el epidídimo a la uretra

vascular bundle: clusters of xylem and phloem tissue in stems (675)

hacucillo vascular: manojo de tejidos del xilema y del floema en los tallos

vascular cambium: meristem that produces vascular tissues and increases the thickness of stems (677)

cámbium vascular: meristemo que produce tejidos vasculares y aumenta el grosor de los tallos

Glossary (continued)

vascular cylinder: central region of a root that includes the vascular tissues—xylem and phloem (670)

cilindro vascular: región central de una raíz que incluye a los tejidos vasculares xilema y floema

vascular tissue: specialized tissue in plants that carries water and nutrients (641)

tejido vascular: tejido especializado de las plantas que transporta agua y nutrientes

vector: animal that transports a pathogen to a human (1013)

vector: animal que transmite un patógeno a un ser humano

vegetative reproduction: method of asexual reproduction in plants, which enables a single plant to produce offspring that are genetically identical to itself (702)

reproducción vegetativa: método de reproducción asexual de las plantas que permite que una única planta produzca descendencia genéticamente idéntica a sí misma

vein: blood vessel that carries blood from the body back to the heart (952)

vena: vaso sanguíneo que transporta la sangre del cuerpo de regreso al corazón

ventricle: lower chamber of the heart that pumps blood out of heart to the rest of the body (792, 949)

ventrículo: cavidad inferior del corazón que bombea la sangre fuera del corazón hacia el resto del cuerpo

vertebrate: animal that has a backbone (731)

vertebrado: animal que posee una columna vertebral

vessel element: type of xylem cell that forms part of a continuous tube through which water can move (666)

elemento vascular (o vaso): tipo de célula del xilema que forma parte de un tubo continuo a través del cual el agua puede desplazarse

vestigial structure: structure that is inherited from ancestors but has lost much or all of its original function (469)

estructura vestigial: estructura heredada de los ancestros que ha perdido su función original en gran parte o por completo

villus (pl. villi): fingerlike projection in the small intestine that aids in the absorption of nutrient molecules (880)

vellosidad: proyección en forma de dedo en el intestino delgado que contribuye a la absorción de las moléculas nutrientes

virus: particle made of proteins, nucleic acids, and sometimes lipids that can replicate only by infecting living cells (574)

virus: partícula compuesta por proteínas, ácidos nucleicos y, a veces, lípidos, que puede replicarse sólo infectando células vivas

vitamin: organic molecule that helps regulate body processes (871)

vitamina: molécula orgánica que ayuda a regular los procesos corporales

viviparous: animals that bear live young that are nourished directly by the mother's body as they develop (822)

vivíparo: animal que da a luz crías vivas que se nutren directamente dentro del cuerpo de la madre mientras se desarrollan

W

weather: day-to-day conditions of the atmosphere, including temperature, precipitation, and other factors (96)

tiempo: condiciones diarias de la atmósfera, entre las que se incluyen la temperatura, la precipitación y otros factores

wetland: ecosystem in which water either covers the soil or is present at or near the surface for at least part of the year (119)

humedal: ecosistema en el cual el agua cubre el suelo o está presente en la superficie durante al menos una parte del año

white blood cell: type of blood cell that guards against infection, fights parasites, and attacks bacteria (955)

glóbulo blanco: tipo de célula sanguínea que protege de las infecciones, combate a los parásitos y ataca a las bacterias

woody plant: type of plant made primarily of cells with thick cell walls that support the plant body; includes trees, shrubs, and vines (653)

planta leñosa: tipo de planta constituida fundamentalmente por células con paredes celulares gruesas que sostienen el cuerpo de la planta; en este tipo se incluyen los árboles, arbustos y vides

X, Y, Z

xylem: vascular tissue that carries water upward from the roots to every part of a plant (643)

xilema: tejido vascular que transporta el agua hacia arriba, desde las raíces a cada parte de una planta

zoonosis (pl. zoonoses): disease transmitted from animal to human (1013)

zoonosis: enfermedad transmitida por un animal a un ser humano

zooplankton: small free-floating animals that form part of plankton (76)

zooplancton: pequeños animales que flotan libremente y forman parte del plancton

zygote: fertilized egg (325, 739, 995)

cigoto: huevo fertilizado

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